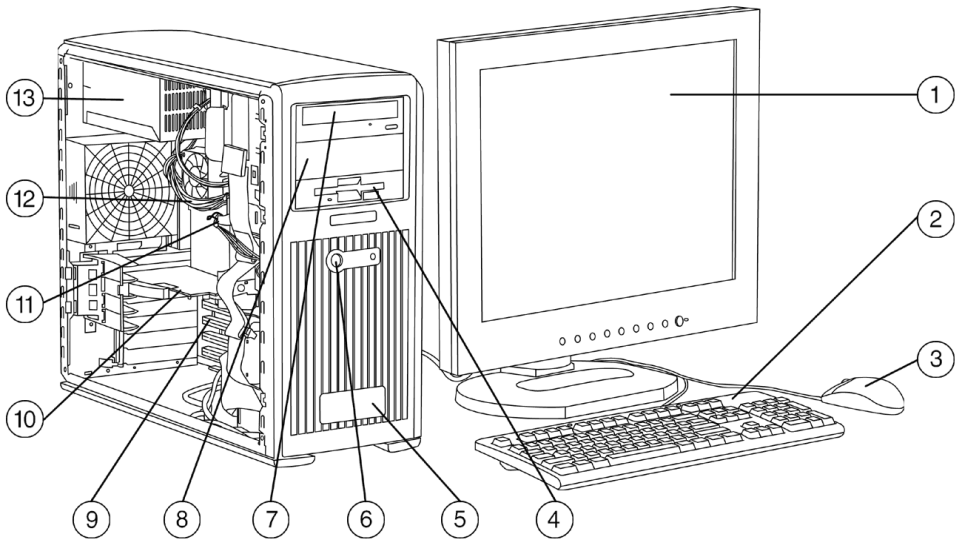
Overview



1. HP Monitor (optional)
2. HP Keyboard
3. HP Mouse
4. Floppy Drive
5. Port cover: USB, IEEE-1394, microphone, headphone
6. On-Off Button
7. Optical Drive
8. Available drive bay
9. Expansion slots
10. Graphics slot
11. Memory sockets
12. Processor
13. Power supply

At A Glance

- Minitower form factor
- Supports one Intel® Pentium® 4 processor, up to 3.06GHz
- Integrated 512-KB L2 cache
- Intel E7205 chipset with dual memory channels (4.2 GB/s throughput) and 533-MHz system bus
- PC2100 ECC DDR-266 expandable to 4-GB
- Ultra320 SCSI hard drives (10,000 or 15,000 rpm) or Ultra ATA/100 hard drives (7200 rpm)
- Integrated Ultra ATA/100 and optional Ultra320 SCSI controllers
- Up to 730-GB of high-performance Ultra320 SCSI internal storage
- Choice of professional graphics:
  NVIDIA Quadro NVS 200,
  NVIDIA Quadro NVS 400,
  NVIDIA Quadro4 380 XGL,
  ATI FIREGL Z1-128p,
  NVIDIA Quadro4 750 XGL
  NVIDIA Quadro4 980 XGL,
  NVIDIA Quadro4 900 XGL
  ATI FIREGL X1-256p
- Dual display support
- Integrated Intel 10/100 network controller
- 10/100/1000 Gigabit Adapter
- 6 total slots (5 PCI and 1 AGP 8X Pro 50)
- 6 bays (3 external and 3internal)
- CD-ROM, DVD-ROM, CD-RW, or DVD+ RW drive
- AC97/16-bit stereo full duplex
- Microsoft® Windows® 2000 Professional, Microsoft Windows XP Professional, Red Hat Linux
  Protected by HP Services, including a three-year, limited warranty — certain restrictions and exclusions apply. Consult the HP Customer Support Center for details. Three-year onsite and labor not available in all countries

Standard Features

Processor One of the following:	Intel Pentium 4 processor 2.4 GHz, 512-KB cache Intel Pentium 4 processor 2.66 GHz, 512-KB cache Intel Pentium 4 processor 2.8 GHz, 512-KB cache Intel Pentium 4 processor 3.06 GHz, 512-KB cache	
Cache Memory	512 KB integrated, full speed Level 2 cache	
Upgradability	Uniprocessor	
Memory	Standard	512-MB or 1-GB of PC2100 ECC DDR-266 (unbuffered)
	Maximum	4-GB of PC2100 ECC DDR-266 (unbuffered)
Network Controller	Integrated Intel PRO/100+ Management Adapter Broadcom NetXtreme 10/100/1000 Gigabit adapter	
Expansion Slots	I/O (total/available)	6/5
	32-bit/33-MHz PCI 2.2	5/5
	AGP Pro 8X Pro 50	1/0 (choice of graphics card)
Expansion Bays	(Total/Available)	6 total / 3available
	Internal 3.5 inch	3 bays / 2available
	External 5.25 inch	2 bays / 1 available
	External 3.5 inch	1 external floppy drive
Storage	Diskette Drive	1.44 MB 3.5 inch
	Removable Media	CD-ROM, DVD-ROM, CD-RW, or DVD+ RW
	Hard Drive	18-GB Ultra320 SCSI (15,000 rpm), 36-GB Ultra320 SCSI (10,000 rpm or 15,000), 73 GB-Ultra320 SCSI (10,000 or 15,000 rpm), 146-GB Ultra320 SCSI (10,000 rpm) 40-GB, 80-GB or 120-GB Ultra ATA/100 (7200 rpm)

Standard Features

Interfaces	Parallel	One 25-pin (rear)
	USB 2.0	6 (2 front, 4 rear)
	Serial	One 9-pin (rear)
	Ultra160 SCSI (optional)	2 (68-pin internal)
	Ultra ATA/100	2 (internal)
	Keyboard (PS/2)	1 (rear)
	Pointing Device	1 (rear)
	Network	1 RJ-45 (rear)
	Video	Choice of graphics controller
	Microphone Jack	2 (1 front & 1 rear)
	Headphone Jack	1 (front)
	Line-In Jack	1 (rear)
	Line-Out Jack	1 (rear)

Graphics *One of the following:*	NVIDIA Quadro NVS 200 (AGP) NVIDIA Quadro NVS 400 (AGP) NVIDIA Quadro4 380 XGL (AGP) ATI FIREGL Z1-128p (AGP) NVIDIA Quadro4 750 XGL (AGP) NVIDIA Quadro4 980 XGL (AGP) NVIDIA Quadro4 9 XGL (AGP) ATI FIREGL X1-256p (AGP)
Audio	AC97/16-bit stereo full duplex
Software	Windows XP Professional preinstalled Windows 2000 Professional, service pack 3, preinstalled Red Hat Linux 7.3 preinstalled, preconfigured, and supported Red Hat 8.0 supported

Intelligent Manageability	**Bios Features**	Advanced Configuration and Power Interface (ACPI) 1.0b Desktop Management Interface (DMI) 2.0 System Management (SM) Bios 2.3
	NIC Hardware	Remote Wakeup Wake on LAN (WoL)
	Web downloads	System Software Manager Insight Management Agent Altiris Express Remote ROM Flash Remote Shut Down

Security	Diskette write and boot control Flash ROM lock Network server mode Parallel interface control Power-on password Serial interface control Setup password Cable lock provision

Standard Features

Power Supply	320 watts with Power Factor Correction
Service and Support	Protected by HP Services including a three-year, limited warranty with three-year parts coverage, three year, on-site service, and three-year labor; 7 x 24 hardware technical phone support and on-line support through the Internet; Pre-Failure Warranty coverage of hard drives and memory. NOTE: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details. Three-year, onsite and labor not available in all countries

Standard Features Pre-Configured Global Models

X5X/2.8/36S/512/Xd	**Processor**	Intel Pentium 4 processor 2.8-GHz
470047-868	***Cache Memory***	512-KB integrated L2
	Memory	512-MB PC2100 ECC DDR-266 (unbuffered)
	Optical Drive	16X/40X DVD-ROM Drive
	Hard Drive	36-GB Ultra320 SCSI (10,000 rpm)
	Graphics	**Not included in base configuration** – Please Choose a card option from below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FIREGL Z1-128p NVIDIA Quardro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL ATI FIREGL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section
	Mouse	3-button mouse
	Operating System	Microsoft Windows XP Professional

Standard Features Pre-Configured Regional Models

X5K/2.4/40A/256/Xr	Processor	Intel Pentium 4 processor 2.4-GHz
470046-904	*Cache Memory*	512-KB integrated L2
	Memory	256-MB PC2100 ECC DDR-266 (unbuffered)
	Optical Drive	CD-RW Drive
	Hard Drive	40-GB ATA/100
	Graphics	**Not included in base configuration** – Please Choose a card option from below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FIREGL Z1-128p NVIDIA Quardro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL ATI FIREGL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section
	Mouse	3-button mouse
	Operating System	Microsoft Windows 2000 Professional SP3

X5X/2.4/40A/256/Xr	Processor	Intel Pentium 4 processor 2.4-GHz
470047-883	*Cache Memory*	512-KB integrated L2
	Memory	256-MB PC2100 ECC DDR-266 (unbuffered)
	Optical Drive	CD-RW Drive
	Hard Drive	40-GB ATA/100
	Graphics	**Not included in base configuration** – Please Choose a card option from below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FIREGL Z1-128p NVIDIA Quardro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL ATI FIREGL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section
	Mouse	3-button mouse
	Operating System	Microsoft Windows XP Professional

Standard Features Pre-Configured Regional Models

X5K/2.4/40A/256/Xr	Processor	Intel Pentium 4 processor 2.4-GHz
470046-905	*Cache Memory*	512-KB integrated L2
	Memory	512-MB PC2100 ECC DDR-266 (unbuffered)
	Optical Drive	CD-RW Drive
	Hard Drive	80-GB ATA/100
	Graphics	**Not included in base configuration** – Please Choose a card option from below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FIREGL Z1-128p NVIDIA Quardro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL ATI FIREGL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section
	Mouse	3-button mouse
	Operating System	Microsoft Windows 2000 Professional SP3

X5K/2.4/18K/512/Xr	Processor	Intel Pentium 4 processor 2.4-GHz
470046-907	*Cache Memory*	512-KB integrated L2
	Memory	512-MB PC2100 ECC DDR-266 (unbuffered)
	Optical Drive	CD-RW Drive
	Hard Drive	18-GB Ultra320 SCSI (15,000 rpm)
	Graphics	**Not included in base configuration** – Please Choose a card option from below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FIREGL Z1-128p NVIDIA Quardro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL ATI FIREGL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section
	Mouse	3-button mouse
	Operating System	Microsoft Windows 2000 Professional SP3

Standard Features Pre-Configured Regional Models

X5X/2.4/18K/512/Xr	Processor	Intel Pentium 4 processor 2.4-GHz
470046-908	*Cache Memory*	512-KB integrated L2
	Memory	512-MB PC2100 ECC DDR-266 (unbuffered)
	Optical Drive	CD-RW Drive
	Hard Drive	18-GB Ultra320 SCSI (15,000 rpm)
	Graphics	**Not included in base configuration** – Please Choose a card option from below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FIREGL Z1-128p NVIDIA Quardro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL ATI FIREGL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section
	Mouse	3-button mouse
	Operating System	Microsoft Windows XP Professional

X5K/2.66/80A/512/Xr	Processor	Intel Pentium 4 processor 2.66-GHz
470046-919	*Cache Memory*	512-KB integrated L2
	Memory	512-MB PC2100 ECC DDR-266 (unbuffered)
	Optical Drive	CD-RW Drive
	Hard Drive	80-GB ATA/100
	Graphics	**Not included in base configuration** – Please Choose a card option from below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FIREGL Z1-128p NVIDIA Quardro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL ATI FIREGL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section
	Mouse	3-button mouse
	Operating System	Microsoft Windows 2000 Professional SP3

Standard Features Pre-Configured Regional Models

X5X/2.66/80A/512/Xr	Processor	Intel Pentium 4 processor 2.66-GHz
470046-922	*Cache Memory*	512-KB integrated L2
	Memory	512-MB PC2100 ECC DDR-266 (unbuffered)
	Optical Drive	CD-RW Drive
	Hard Drive	80-GB ATA/100
	Graphics	**Not included in base configuration** – Please Choose a card option from below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FIREGL Z1-128p NVIDIA Quardro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL ATI FIREGL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section
	Mouse	3-button mouse
	Operating System	Microsoft Windows XP Professional

X5X/2.66/36S/512/Xr	Processor	Intel Pentium 4 processor 2.66-GHz
470046-923	*Cache Memory*	512-KB integrated L2
	Memory	512-MB PC2100 ECC DDR-266 (unbuffered)
	Optical Drive	CD-RW Drive
	Hard Drive	36-GB Ultra320 SCSI (10,000 rpm)
	Graphics	**Not included in base configuration** – Please Choose a card option from below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FIREGL Z1-128p NVIDIA Quardro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL ATI FIREGL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section
	Mouse	3-button mouse
	Operating System	Microsoft Windows XP Professional

X5K/2.66/36S/512/Xr	Processor	Intel Pentium 4 processor 2.66-GHz
470046-924	*Cache Memory*	512-KB integrated L2
	Memory	512-MB PC2100 ECC DDR-266 (unbuffered)
	Optical Drive	CD-RW Drive
	Hard Drive	36-GB Ultra320 SCSI (10,000 rpm)
	Graphics	NVIDIA Quardro4 750 XGL
	Mouse	3-button mouse
	Operating System	Microsoft Windows 2000 Professional SP3

Standard Features Pre-Configured Regional Models

X5K/2.8/80A/512/Xr	Processor	Intel Pentium 4 processor 2.8-GHz
470046-937	*Cache Memory*	512-KB integrated L2
	Memory	512-MB PC2100 ECC DDR-266 (unbuffered)
	Optical Drive	CD-RW Drive
	Hard Drive	80-GB ATA/100
	Graphics	**Not included in base configuration** – Please Choose a card option from below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FIREGL Z1-128p NVIDIA Quardro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL ATI FIREGL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section
	Mouse	3-button mouse
	Operating System	Microsoft Windows 2000 Professional SP3

X5X/2.8/80A/512/Xr	Processor	Intel Pentium 4 processor 2.8-GHz
470046-938	*Cache Memory*	512-KB integrated L2
	Memory	512-MB PC2100 ECC DDR-266 (unbuffered)
	Optical Drive	CD-RW Drive
	Hard Drive	80-GB ATA/100
	Graphics	**Not included in base configuration** – Please Choose a card option from below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FIREGL Z1-128p NVIDIA Quardro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL ATI FIREGL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section
	Mouse	3-button mouse
	Operating System	Microsoft Windows XP Professional

Standard Features Pre-Configured Regional Models

X5X/2.8/36S/256/Xr	Processor	Intel Pentium 4 processor 2.8-GHz
470046-939	*Cache Memory*	512-KB integrated L2
	Memory	256-MB PC2100 ECC DDR-266 (unbuffered)
	Optical Drive	CD-RW Drive
	Hard Drive	36-GB Ultra320 SCSI (10,000 rpm)
	Graphics	**Not included in base configuration** – Please Choose a card option from below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FIREGL Z1-128p NVIDIA Quardro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL ATI FIREGL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section
	Mouse	3-button mouse
	Operating System	Microsoft Windows XPProfessional

X5X/2.8/36S/512/Xr	Processor	Intel Pentium 4 processor 2.8-GHz
470046-940	*Cache Memory*	512-KB integrated L2
	Memory	512-MB PC2100 ECC DDR-266 (unbuffered)
	Optical Drive	CD-RW Drive
	Hard Drive	36-GB Ultra320 SCSI (10,000 rpm)
	Graphics	**Not included in base configuration** – Please Choose a card option from below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FIREGL Z1-128p NVIDIA Quardro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL ATI FIREGL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section
	Mouse	3-button mouse
	Operating System	Microsoft Windows 2000 Professional SP3

Standard Features Pre-Configured Regional Models

X5K/3.06/80A/512/Xr	Processor	Intel Pentium 4 processor 3.06-GHz
470046-964	*Cache Memory*	512-KB integrated L2
	Memory	512-MB PC2100 ECC DDR-266 (unbuffered)
	Optical Drive	CD-RW Drive
	Hard Drive	80-GB ATA/100
	Graphics	**Not included in base configuration** – Please Choose a card option from below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FIREGL Z1-128p NVIDIA Quardro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL ATI FIREGL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section
	Mouse	3-button mouse
	Operating System	Microsoft Windows 2000 Professional SP3

X5X/3.06/80A/512/Xr	Processor	Intel Pentium 4 processor 3.06-GHz
470046-965	*Cache Memory*	512-KB integrated L2
	Memory	512-MB PC2100 ECC DDR-266 (unbuffered)
	Optical Drive	CD-RW Drive
	Hard Drive	80-GB ATA/100
	Graphics	**Not included in base configuration** – Please Choose a card option from below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FIREGL Z1-128p NVIDIA Quardro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL ATI FIREGL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section
	Mouse	3-button mouse
	Operating System	Microsoft Windows XP Professional

Standard Features Pre-Configured Regional Models

X5K/3.06/36S/512/Xri	Processor	Intel Pentium 4 processor 3.06-GHz
470046-967	*Cache Memory*	512-KB integrated L2
	Memory	512-MB PC2100 ECC DDR-266 (unbuffered)
	Optical Drive	CD-RW Drive
	Hard Drive	36-GB Ultra320 SCSI (10,000 rpm)
	Graphics	**Not included in base configuration** – Please Choose a card option from below: NVIDIA Quadro NVS 200 NVIDIA Quadro NVS 400 NVIDIA Quadro4 380 XGL ATI FIREGL Z1-128p NVIDIA Quardro4 750 XGL NVIDIA Quadro4 980 XGL NVIDIA Quadro4 900 XGL ATI FIREGL X1-256p NVIDIA Quadro FX2000 NOTE: Please see Part Numbers in After market options/Standalone accessories section
	I/O Card	IEEE 1394 Firewire Card
	Mouse	3-button mouse
	Operating System	Microsoft Windows 2000 Professional SP3

Configure to order options

Processor	Intel Pentium 4 processor 2.4-GHz, 512-KB cache, 533-MHz system bus Intel Pentium 4 processor 2.66-GHz, 512-KB cache, 533-MHz system bus Intel Pentium 4 processor 2.8-GHz, 512-KB cache, 533-MHz system bus Intel Pentium 4 processor 3.06-GHz, 512-KB cache, 533-MHz system bus
Graphics Card (Video Card)	NVIDIA Quadro NVS 200 (AGP) NVIDIA Quadro NVS 400 (AGP) NVIDIA Quadro4 380 XGL (AGP) ATI FIREGL Z1-128p (AGP) NVIDIA Quadro4 750 XGL NVIDIA Quadro4 980 XGL (AGP) NVIDIA Quadro4 900 XGL ATI FIREGL X1-256p (AGP)
Memory	256-MB (1X256-MB) PC2100 ECC DDR-266 (unbuffered) 256-MB (2X128-MB) PC2100 ECC DDR-266 (unbuffered) 512-MB (1X512-MB) PC2100 ECC DDR-266 (unbuffered) 512-MB (2x256-MB) PC2100 ECC DDR-266 (unbuffered) 1-GB (2x512-MB) PC2100 ECC DDR-266 (unbuffered) 1-GB (1X1-GB) PC2100 ECC DDR-266 (unbuffered) 2-GB (4x512-MB) PC2100 ECC DDR-266 (unbuffered) 2-GB (2x1-GB) PC2100 ECC DDR-266 (unbuffered) 3-GB (2x512-MB 2x1-GB) PC2100 ECC DDR-266 (unbuffered) 4-GB (4X1-GB) PC2100 ECC DDR-266 (unbuffered)
Monitors	HP L1825 Flat Panel Color Monitor (18-inch, Carbon/Silver) HP L1925 Flat Panel Color Monitor (19-inch, Carbon/Silver) HP L2025 Flat Panel Color Monitor (20-inch, Carbon/Silver) HP p930 Flat screen CRT (19-inch, Carbon/Silver) HP p1130 Flat screen CRT (21-inch, Carbon/Silver)
Primary hard disks	40-GB Ultra ATA/100 EIDE (7,200 rpm) 80-GB Ultra ATA/100 EIDE (7,200 rpm) 120-GB Ultra ATA/100 EIDE (7,200 rpm) 36-GB Ultra320 SCSI (10,000 rpm) 73-GB Ultra320 SCSI (10,000 rpm) 146-GB Ultra320 SCSI (10,000 rpm) 18-GB Ultra320 SCSI (15,000 rpm) 36-GB Ultra320 SCSI (15,000 rpm) 73-GB Ultra320 SCSI (15,000 rpm)

Configure to order options

Secondary hard disks	40-GB Ultra ATA/100 EIDE (7,200 rpm) 80-GB Ultra ATA/100 EIDE (7,200 rpm) 120-GB Ultra ATA/100 EIDE (7,200 rpm) 36-GB Ultra320 SCSI (10,000 rpm) 73-GB Ultra320 SCSI (10,000 rpm) 146-GB Ultra320 SCSI (10,000 rpm) 18-GB Ultra320 SCSI (15,000 rpm) 36-GB Ultra320 SCSI (15,000 rpm) 73-GB Ultra320 SCSI (15,000 rpm)
Third hard disks (SCSI only)	36-GB Ultra320 SCSI (10,000 rpm) 73-GB Ultra320 SCSI (10,000 rpm) 146-GB Ultra320 SCSI (10,000 rpm) 18-GB Ultra320 SCSI (15,000 rpm) 36-GB Ultra320 SCSI (15,000 rpm) 73-GB Ultra320 SCSI (15,000 rpm)
SCSI Controller	LSI Logic single-channel Ultra160 SCSI controller
Optical Drives	48X CD-ROM 48X CD-RW 16X DVD-ROM 48X CD-RW/DVD-ROM combo 4.7-GB DVD+ RW
Input devices	Easy Access Keyboard (PS/2) 3-Button Mouse (PS/2) Scroll Mouse (PS/2)
NICs	10/100/1000 Gigabit adapter
I/O Card	IEEE 1394 Firewire Card
Operating System	Windows XP Professional preloaded Windows 2000 Professional SP3 preloaded Red Hat Linux 8.0 preloaded (available early 2003)

After market options/Standalone accessories

		Part #:
Memory	256-MB PC-2100 ECC DDR-266 (unbuffered)	AA632A
	512-MB PC-2100 ECC DDR-266 (unbuffered)	AA633A
	1-GB PC-2100 ECC DDR-266 (unbuffered)	AA634A
Graphics	NVIDIA Quadro NVS 200 (AGP)	AA603A
	NVIDIA Quadro NVS 200 DVI Cables	AA604A
	NVIDIA Quadro NVS 400 (PCI)	AA605A
	NVIDIA Quadro NVS 400 DVI Cables	AA606A
	NVIDIA Quadro4 380 XGL (AGP)	AA653A
	ATI FIREGL Z1-128p	AA624A
	NVIDIA Quadro4 750 XGL (AGP)	270731-B21
	NVIDIA Quadro4 980 XGL (AGP)	AA623A
	NVIDIA Quadro4 900 XGL (AGP)	284279-B21
	ATI FIREGL X1-256p	AA625A
Hard Drives	*Ultra320 SCSI Drives*	
	36-GB Ultra320 SCSI (10,000 rpm)	AA612A
	73-GB Ultra320 SCSI (10,000 rpm)	AA613A
	146-GB Ultra320 SCSI (10,000 rpm)	AA614A
	18-GB rpm Ultra320 SCSI (15,000 rpm)	310506-B21
	36-GB Ultra320 SCSI (15,000 rpm)	AA616A
	73-GB Ultra320 SCSI (15,000 rpm)	AA617A
	Ultra ATA/100 Drives	
	40 GB ATA/100 EIDE (7,200 rpm)	DC180A
	80 GB ATA/100 EIDE (7,200 rpm)	DC181A
	160 GB ATA/100 EIDE (7,200 rpm)	DC189A
Storage Controllers	LSI Logic single-channel Ultra160 SCSI controller (cable sold separately)	AA601A
	Ultra320 dual channel SCSI controller (cable sold separately)	AA611A
	Ultra320 SCSI RAID controller (cable sold separately)	AA850A
	5-device SCSI cable	AA818A
Optical Drives	48X/24X/48X CD-RW Drive	DE205A
	16X DVD +/- Drive with Windows DVD software	AA620A
	16X DVD +/- Drive with Power DVD Software	310475-B21
	4.7GB DVD+R/RW Drive – 300i	AA851A
I/O cards	IEEE 1394/Firewire Card (PCI)	AA638A
	USB 2.0 PCI Card	AA639A

After market options/Standalone accessories

Communications	V90 56K PCI WIN Modem	239137-B21
	V90 56K International Soft WIN Modem	259032-B24
Input devices	Easy Access keyboard - carbonite (PS/2)	DC167B
	Three button mouse-carbon (PS/2)	AA778A
	Two button Optical Mouse - carbonite/silver (USB)	DC172B
	Two button Scroll Mouse - carbonite (PS/2)	DD440B
	Spaceball 5000	DE934A
Security	USB Fingerprint Identification	240238-B21
	USB SmartCard Keyboard	267147-008
	Corvadis USB Enhanced SmartCard Reader	240154-B21
Rack options	StorageWorks Enclosure 4314R	190209-001
	Rack mounting kits	AA640A
	Fixed shelf kit	253449-B21
	Sliding Shelf Kit	234672-B21
	Depth Adjustable Rails	332558-B21
Monitors	HP L1825 Flat Panel Color Monitor (18-inch, Carbon/Silver)	303486-003
	HP L1925 Flat Panel Color Monitor (19-inch, Carbon/Silver)	P9626A
	HP L2025 Flat Panel Color Monitor (20-inch, Carbon/Silver)	303102-003
	HP p930 Flat screen CRT Monitor (19-inch, Carbon/Silver)	302268-003
	HP p1130 Flat screen CRT Monitor (21-inch, Carbon/Silver)	302270-003

Memory

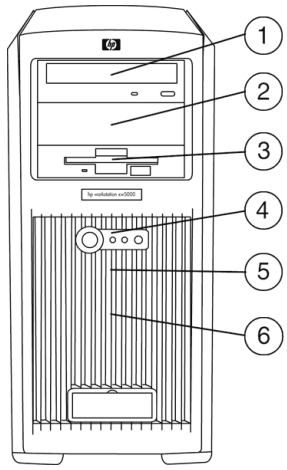
Standard Memory

This system supports unbuffered PC2100 DDR-266 ECC DDR memory. The mainboard has 4 DIMM slots (2 pairs, 2 dual channel) and ships with 512-MB as standard. It can support a maximum of 4 GB of RAM when optional memory upgrades are included.

These memory options are available from HP:	*Part #*
• *256-MB Upgrade Kit PC-2100 ECC DDR-266 ECC (unbuffered)*	AA632A
• 512-MB Upgrade Kit PC-2100 ECC DDR-266 (unbuffered)	AA633A
• 1-GB Upgrade Kit PC-2100 ECC DDR-266 ECC (unbuffered)	AA634A

Storage

Drive Bay Locations



Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
1.44-MB Diskette Drive	Up to 1	3	Integrated
Optical Drives	Up to 2		
CD-ROM Drive		1, 2	Integrated Ultra ATA/100
DVD-ROM Drive		1, 2	Integrated Ultra ATA/100
CD-RW Drive		1, 2	Integrated Ultra ATA/100
DVD+ RW		1,2	Integrated Ultra ATA/100
Hard Drives			
Ultra320 SCSI Drives			
1-inch	Up to 3	4, 5,6	Optional Ultra160 SCSI Controller
146-GB 10,000 rpm			
73-GB 10,000 rpm			
73-GB 15,000rpm			
36-GB 15,000 rpm			
18-GB 10,000 rpm			
18-GB 15,000 rpm			
Ultra ATA Drives			
1-inch	Up to 2	4, 5	Integrated EIDE
160-GB 7200 rpm			
80-GB 7200 rpm			
40-GB 7200 rpm			

Maximum Storage Capacity

Internal	SCSI: 438 GB (assumes three 146-GB SCSI drives installed) IDE: 320 GB

System Unit	**Tower Dimensions** (HxWxD)	17.7 x 8.3 x 20.3 in/44.9 x 21 x 51.5 cm	
	Weight (standard configuration)	38 lb/17 kg	
	Power Supply	Operating Voltage Range	100 VAC to 240 VAC
		Rated Voltage Range	100 VAC to 120 VAC; 200 VAC to 240 VAC
		Rated Line Frequency	50-Hz to 60-Hz
		Rated Input Current	5.0-A @ 100 VAC; 2.5A @ 240 VAC
		Maximum Rated Power	500-Watt input, 320-Watt output
		Physical Dimensions	5.9 x 3.4 x 5.5 in/15x 8.6 x 14 cm
		Weight	<5.7 lb/< 2.6kg
	Temperature (Values are subject to change)	Operating	50° to 95° F/10° to 35° C
		Non-operating	-40° to 158° F/-40° to 70° C
	Humidity (non-condensing) (Values are subject to change)	Operating	15 to 80% relative @ 95° F /35° C
		Non-operating	0% to 90% @ 158° F/70° C
	Maximum Altitude (nonpressurized)	Operating	10000 ft/3100 m max
		Non-operating	15000 ft/4600 m max

HP Easy Access Keyboard	**Dimensions** (HxWxD)	18.3 x 6.3 x 1.4 in/46.48 x 16.0 x 3.56 cm	
	Weight	Approximately 2 lb/0.9 kg	
	Input Specifications	Operating Voltage	+ 5VDC ± 5%
		Power Consumption	50 mA maximum (with 3 LEDs on)
		System Interface	PS/2 mini-din connector
		ESD	CE level 4, 15 kV air discharge
		EMI-RFI	Conforms to FCC rules for a Class B computing device
		PC98	Functionally compliant
	Mechanical	Languages	18+ available
		Keycaps	Low-profile design
		Switch Actuation	55 g nominal peak force with tactile feedback
		Switch Life	20 million keystrokes (using Hasco modified tester)
		Switch Type	Contamination resistant membrane
		Key Leveling Mechanism	For all double wide and greater length keys
		Cable Length	6 ft/1.8 m
		PC98-99	Mechanically compliant
		Acoustics	50 dBA maximum sound pressure level
	Environmental	Operating Temperature	50° to 122° F/10° to 50° C
		Non-operating Temperature	-22° to 140° F/-30° to 60° C
		Operating Humidity	10% to 90% (non condensing at ambient)
		Non-operating Humidity	20% to 80% (non condensing at ambient)
		Operating Shock	40 g, 6 surfaces
		Non-operating Shock	80 g, 6 surfaces
		Operating Vibration	2 g peak acceleration
		Non-operating Vibration	4 g peak acceleration

1.44-MB Diskette Drive	**Size**	3.5 in (8.89 cm)	
	LED Indicators (front panel)	Green	
	Read/Write Capacity per Diskette (high/low)	1.44 MB/720 KB	
	Drive Height	One-third	
	Drive Rotation	300 rpm	
	Transfer Rate (high/low)	500/250 KB/s	
	Bytes/Sector	512	
	Sectors/Track (high/low)	18/9	
	Tracks/Side (high/low)	80/80	
	Access Times	Track-to-Track (high/low)	3/6 ms
		Average (high/low)	94/173 ms
		Settling Time	15 ms
		Latency Average	100 ms
	Cylinders (high/low)	80/80	
	Read/Write Heads	Two	

HP 3-Button Mouse	**Dimensions/Weight**	Height	1.42 in (3.6 cm)
		Length	4.17 in (10.7 cm)
		Width	2.87 in (7.4 cm)
		Weight	5.20 oz (150 g)
	Environmental	Operating Temperature	32° to 104° F (0° to 40° C)
		Non-operating Temperature	-4° to 140° F (-20° to 60° C)
		Operating Humidity	10% to 90% (non condensing at ambient)
	Mechanical	Resolution	400 ± 20% DPI
		Tracking Speed	10 in/s Maximum
		Switch Life	1,000,000 operations (using Hasco modified tester)
		Switch Type	Micro-switches
		Tracking Mechanism Life	155 miles (250 km) at average speed of 10 in/s
		Cable Length	6 ft (1.8 m)
		PC98-99	Mechanically compliant
	Regulatory Approvals	Compliant	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BSMI, C-Tick

HP 2-Button Scroll Mouse	Scroll Wheel	8 mm	
	Maximum Rotation Speed	30 mm/s	
	Switch Type	Light force micro-switch	
	Switch Life	1 million operations	
	Mechanical Life	Minimum 200,000 revolutions	
	Environmental	Operating Temperature	50° to 122° F (10° to 50° C)
		Non-operating Temperature	-22° to 140° F (-30° to 60° C)
		Operating Humidity	10% to 90% (non condensing at ambient)
		Non-operating Humidity	20% to 80% (non condensing at ambient)
		Operating Shock	40 g, 6 surfaces
		Non-operating Shock	80 g, 6 surfaces
		Operating Vibration	2 g peak acceleration
		Non-operating Vibration	4 g peak acceleration
	Electrical	Operating Voltage	+ 5VDC ± 10%
		Power Consumption	15mA
		System Consumption	PS/2 mini-din connector
		ESD	CE level 4, 15 kV air discharge
		EMI-RFI	Conforms to FCC rules for a Class B computing device
		PC98	Functionally compliant
	Mechanical	Resolution	400 ± 20% DPI
		Tracking Speed	10 in/s Maximum
		Acceleration	100 in/s
		Switch Actuation	85 g nominal peak force
		Switch Life	1,000,000 operations (using Hasco modified tester)
		Cable Length	2 m
		PC98-99	Mechanically compliant
	Regulatory Approvals	UL, CSA, FCC, CE Mark, TUV, TUV GS, VCCI, BCIQ, C -Tick	

Ultra320 SCSI Hard Drives	146 GB, 10K	Capacity	146,815,737,856 bytes	
		Height	1 in/2.54 cm	
		Width	3.5 in/8.89 cm	
		Interface	Ultra320 SCSI	
		Transfer rate synchronous (maximum)	320 MB/s	
		Seek time (typical reads, including settling)	Single track	0.55 ms
			Average	4.9 ms
			Full-stroke	9.2 ms
		Rotational speed	10,000 rpm	
		Logical blocks	286,749,488	
		Operating temperature	41° to 131° F/5° to 55° C	
	73 GB, 15K	Capacity	73,407,865,856 bytes	
		Height	1 in/2.54 cm	
		Width	3.5 in/8.89 cm	
		Interface	Ultra320 SCSI	
		Transfer rate synchronous (maximum)	320 MB/s	
		Seek time (typical reads, including settling)	Single track	0.4 ms
			Average	3.8 ms
			Full-stroke	6.7 ms
		Rotational speed	15,000 rpm	
		Logical blocks	143,374,744	
		Operating temperature	41° to 131° F/5° to 55° C	
	73 GB, 10K	Capacity	73,407,865,856 bytes	
		Height	1 in/2.54 cm	
		Width	3.5 in/8.89 cm	
		Interface	Ultra320 SCSI	
		Transfer rate synchronous (maximum)	320 MB/s	
		Seek time (typical reads, including settling)	Single track	0.55 ms
			Average	4.90 ms
			Full-stroke	9.20 ms
		Rotational speed	10,000 rpm	
		Logical blocks	143,337,744	
		Operating temperature	41° to 131° F/5° to 55° C	
	36 GB, 15K	Capacity	36,420,075,520 bytes	
		Height	1 in/2.54 cm	
		Width	3.5 in/8.89 cm	
		Interface	Ultra320 SCSI	
		Transfer rate synchronous (maximum)	320 MB/s	
		Seek time (typical reads, including settling)	Single track	0.4 ms
			Average	3.8 ms
			Full-stroke	6.7 ms
		Rotational speed	15,000 rpm	

	Logical blocks	71,631,920	
	Operating temperature	41° to 131° F/5° to 55° C	
36 GB, 10K	**Capacity**	36,420,075,520 bytes	
	Height	1 in/2.54 cm	
	Width	3.5 in/8.89 cm	
	Interface	Ultra320 SCSI	
	Transfer rate synchronous (maximum)	320 MB/s	
	Seek time (typical reads, including settling)	Single track	0.55 ms
		Average	4.90 ms
		Full-stroke	9.20 ms
	Rotational speed	10,000 rpm	
	Logical blocks	71,132,960	
	Operating temperature	41° to 131° F/5° to 55° C	
18 GB, 15K	**Capacity**	18,209 MB	
	Height	1 in/2.54 cm	
	Width	3.5 in/8.89 cm	
	Interface	Ultra320 SCSI	
	Transfer rate synchronous (maximum)	320 MB/s	
	Seek time (typical reads, including settling)	Single track	0.4 ms
		Average	3.8 ms
		Full-stroke	6.7 ms
	Rotational speed	15,000 rpm	
	Logical blocks	35,566,480	
	Operating temperature	41° to 131° F/5° to 55° C	

Ultra ATA Hard Drives

160 GB	Capacity	160,000-MB	
	Height	1 in/2.54 cm	
	Width	4 in/10.16 cm	
	Interface	Ultra ATA/100	
	Synchronous Transfer Rate (Maximum)	100 MB/s	
	Seek time (typical reads, including settling)	Single track	0.8 ms
		Average	9.0 ms
		Full-stroke	17.0 ms
	Rotational speed	7200 rpm	
	Logical blocks	122,942,324,736	
	Operating temperature	41° to 131° F/5° to 55° C	
80 GB	Capacity	81,964-MB	
	Height	1 in/2.54 cm	
	Width	4 in/10.16 cm	
	Interface	Ultra ATA/100	
	Synchronous Transfer Rate (Maximum)	100 MB/s	
	Seek time (typical reads, including settling)	Single track	0.8 ms
		Average	9.0 ms
		Full-stroke	17.0 ms
	Rotational speed	7200 rpm	
	Logical blocks	81,964,302,336	
	Operating temperature	41° to 131° F/5° to 55° C	
40 GB	Capacity	80,293-MB	
	Height	1 in/2.54 cm	
	Width	4 in/10.16 cm	
	Interface	Ultra ATA/100	
	Synchronous Transfer Rate (Maximum)	100 MB/s	
	Seek time (typical reads, including settling)	Single track	0.8 ms
		Average	9.0 ms
		Full-stroke	17.0 ms
	Rotational speed	7200 rpm	
	Logical blocks	80,293,248	
	Operating temperature	41° to 131° F/5° to 55° C	

Adaptec SCSI RAID 2120S Card	Dimensions (H x D)	2.5 x 6.6 in (6.4 x 16.8 cm) Low profile card	
	RAID Level	0, 1, 10, 5, JBOD	
	Data Transfer Rate	Up to 320 MB/s	
	Cache Memory	64 MB (onboard)	
	Device Support	Up to 15 SCSI devices	
	Bus Type	64-bit/66MHz PCI (Also support 32-bit/33MHz PCI)	
	Internal Connectors	One 68-pin high-density	
	External Connectors	One 68-pin VHDCI	
	System Requirements	Intel PC or equivalent with available PCI slot	
	Operating Temperature	32°to 131° F (0°to 55° C)	
	Power Requirements	4 amps @ +5V	
	Operating System Support	Windows 2000 Professional, Windows XP Professional	
	Other	Optimized disk utilization Online RAID Level Migration Online capacity expansion Immediate RAID availability (background initialization) S.M.A.R.T. support	

48X CD-ROM Drive	Height	5.25-inch, half-height	
	Interface type	EIDE/ATAPI	
	Dimensions– External, Excluding Bezel (W x H)	5.74 x 1.62 in/14.6 x 4.13 cm	
	Weight	1.6 lb/0.75 kg	
	Disc diameter	5 in, 3 in (12 cm, 8 cm)	
	Disc thickness	0.05 inch/1.2 mm	
	Disk	Applicable Disk	Mixed Mode (Audio and Data Combined) CD-DA, Mode 1(basic format), Mode2 form1& form2 Photo-CD (Multi-Session), CD-XA Ready CD-I Ready, CD-Plus/CD-Extra, CD-RW
		Capacity (yellow book)	2,048 bytes/block (Mode1&Mode2 Form 1) 2,340, 2,336 bytes/block (Mode2) 2,332 bytes/block (Mode2 Form2) 2,352 bytes/block (CD-DA)
		Rotational Speed	22X~ 48X(CAV) 10,000 rpm maximum
	Block Size	Mode 1	2,048 bytes
		Mode 2	2,340, 2,336 bytes
		CD-DA	2,352 bytes
		CD-XA	2,328 bytes
	Data Transfer Rate	Sustained	3,300 to 7,200 KB/s
	Data buffer	128-KB	
	Access Times (typical)	Random	75 ms (typical)
	Audio Output Level	Line-Out	0.7 VRMS
	Start-up Time (typical)	< 3.3 s	
	Stop Time	< 3.6 s	
	Operating Conditions	Temperature	41° to 122° F/5° to 50° C
		Humidity	10% to 80%

48/24/48X CD-RW	Capacity	700 MB CD disc	
	Dimensions (HxWxD)	1.63 x 5.75 x 7.27 in/4.13 x 14.6 x 18.5 cm	
	Weight	2.0 lb/0.9 kg	
	Interface	ATAPI/EIDE	
	Mounting Orientation	Horizontal or vertical	
	Data Transfer Rates – Read	Digital audio extraction (minimum) —1,800 KB/s (12X) CD read — up to 7,200 KB/s (48X) DVD read — up to 21,600 KB/s (16X)	
	Media and Formats - Read	**Formats**: CD-DA, CD-ROM (Mode 1 and 2), CD-ROM XA (Mode 2, Form 1 and 2), Mixed Mode, CD-Plus, CD-Extra, CD-I FMV, Video CD, CD-Text, Photo CD (single and multisession); **Media**: stamped, CD-R, CD-RW	
	Data Transfer Rates - Write	CD-R write — 1200 KB/s (8X) CD-R write — 1800 KB/s (12X) CD-R write — 2400 KB/s (16X) CD-R write — 3000 KB/s (20X) to 6000 KB/s (40X) CD-R write — 7200 KB/s (48X) CD-RW write — 600 KB/s (4X) CD-RW write —1500 KB/s (10X) CD-RW write — 2400 KB/s (16X) CD-RW write —3600 KB/s (24X)	
	Media and Formats - Write	**Formats**: CD-DA, CD-ROM (Mode 1 and 2), CD-ROM XA (Mode 2, Form 1 and 2), Mixed Mode, CD-Plus, CD-Extra, CD-I FMV, Video CD, CD-Text; **Media**: CD-R, CD-RW (including ultra-speed)	
	Write Methods	Disc-at-once, session-at-once,, track-at-once, incremental fixed and variable packet, multisession	
	Data Transfer Modes	PIO Mode 4 (16.6 MB/s); Multi-word DMA mode 2 (16.6 MB/s); UltraDMA Mode 2 (33.3 MB/s)	
	Access Times (typical reads, including settling)	CD-ROM Mode 1	100 ms
		Full Stroke CD	160 ms (seek)
	Start-up Time (typical)	<4 s (single session), <30 s (multisession)	
	Stop Time (typical)	<3 s	
	Write Buffer Size	2 MB	
	Audio Output	Line-Out	0.7 VRMS
		Signal-to-Noise Ratio	80 dB
		Channel Separation	70 dB
	Configuration Jumper Block	Master, slave, and cable select modes	
	Operating Conditions	Temperature	41° to 113° F / 5° to 45° C
		Humidity	10% to 80%
	Approvals / Environmental	MPC-3 compliant, multi-read requirements, UL 1950, ACA AS/NZS 3548, ANSI C63.4–1992, ATAPI Spec SFF-8020, ATA Spec X3T9.2, CB Bulletin No. 92A, CSA C22.2 No. 950-1995, C.I.S.P.R. Pub 22, DHHS/FDA, EMKO-TSE 07/94, TUV, EN60825-1	
	Operating Systems Supported	Microsoft Windows 2000, Windows XP	
	Supplied software	Roxio Easy CD Creator 5.3.4: Create or copy CDs and DVDs, including music and data CDs, and data DVDs; Dantz Retrospect Express 6.0: Back up systems to CD, DVD, or tape media.	

16X/40 DVD-ROM Read	Height	5.25-inch, half-height	
	Interface type	ATAPI	
	Dimensions–External, Excluding Bezel (W x H)	5.88 x 1.71 in/14.9 x 4.34 cm	
	Disc diameter	5 in, 3 in (12 cm, 8 cm)	
	Disc thickness	0.05 inch (1.2 mm)	
	Track pitch	1.6 μm (CD), 0.74 μm (DVD)	
	Disc center hole diametre	0.6 inch (15 mm)	
	Disc formats	DVD-ROM (single and dual layer); DVD-video; DVD-R version 1.0 and 2.0; DVD-RW version 1.0 and 1.1; DVD-R/RW multi-border; DVD+RW; CD-ROM Mode 1 and 2; CD-DA; CD-ROM XA Mode 2, Form 1 and 2; CD-extra; CD-text; CD-I Mode 2, Form 1 and 2; CD-I ready; video CD, CD-bridge; PhotoCD (single and multi-session); CD-R; CD-RW	
	Disc capacity	DVD-ROM	4.7 GB (DVD-5), 8.54 GB (DVD-9), 9.4 GB (DVD-10), 3.95 GB (DVD-R version 1.0), 4.7 GB (DVD-R version 2.0), 4.7 GB (DVD-RW version 1.0 and 1.1), 4.7 GB (DVD+ RW)
		CD-ROM	540 MB (Mode 1, 12 cm), 640 MB (Mode 2, 12 cm), 700 MB (80 minimum CD-R and CD-RW), 180 MB (8 cm)
	Block size (bytes)	DVD-ROM – 2048; CD-ROM Mode 0 – 2352; CD-ROM Mode 1 – 2352, 2340, 2336, 2048; CD-ROM Mode 2 – 2352, 2340, 2336, 2048	
	Access times (typical reads, including settling)	DVD-ROM single layer	< 120 ms
		CD-ROM Mode 1	< 90 ms
		Full stroke DVD	< 240 ms (seek)
		Full stroke CD	< 160 ms (seek)
	Data transfer rates	2600 – 6000 KB/s (40X CAV CD-ROM mode) 8100 – 21,600 KB/s (16X CAV DVD-ROM mode)	
	Data transfer modes	PIO Mode 4 (16.6 MB/s); Multi-word DMA mode 2 (16.6 MB/s); UltraDMA Mode 3 (44.4 MB/s)	
	Power	Source	Four-pin, DC power receptacle
		DC power requirement	5 VDC ± 5%—100 mV ripple p-p 12 VDC ± 5%—200 mV ripple p-p
		DC current	5 VDC - <800 mA typical, < 1000 mA maximum 12 VDC - < 870 mA typical
	Audio Output Level	0.7 Vrms (typical)	
	Configuration Jumper Block	Master, slave, and cable select modes	
	Data interface connector	40-pin, shrouded and keyed, flat ribbon	
	Environmental (all conditions non-condensing)	Temperature (operating)	41° to 122° F/5° to 50° C
		Relative humidity (operating)	10% to 85%
		Maximum wet bulb temperature (operating)	86° F/30° C
	Certifications, approvals	MMC II support, multi-read certification, Microsoft WHQL certification, ACA AS/NZS 3548 class B, CNS 13438, C.I.S.P.R. Pub 22, TUV or VDE EN60950, EN 55022, EN55024, SEMKO, NEMKO, DEMKO, FIMKO, EN 60825-1, UL 60950, CSA C22.2 60950-2000	
	Operating systems supported	Microsoft Windows 98, Microsoft Windows NT® 4.0, Microsoft Windows 2000, Windows XP Professional	

48/24/48+16X Combo CD-RW/DVD-ROM	**Capacity**	4.7 and 9.4 GB DVD disc / 700 MB CD disc	
	Dimensions (HxWxD)	1.63 x 5.75 x 7.27 in/4.13 x 14.6 x 18.5 cm	
	Weight	2.0 lb/0.9 kg	
	Interface	ATAPI/EIDE	
	Mounting Orientation	Horizontal or vertical	
	Data Transfer Rates – Read	Digital audio extraction (minimum) —1,200 KB/s (8X) CD read — up to 7,200 KB/s (48X) DVD read — up to 21,600 KB/s (16X)	
	Media and Formats - Read	**CD Formats**: CD-DA, CD-ROM (Modes 1 and 2), CD-ROM XA (Mode 2, Form 1 and 2), Mixed mode, CD-Extra, CD-I FMV, Video CD, Photo CD (single and multi-session), CD-Text, CD-Plus; **CD Media**: stamped, CD-R; CD-RW **DVD Formats**: DVD-ROM, DVD-Video (with application support), DVD-R (version 1.0 and 2.0), DVD-RW (version 1.0 and 1.1), DVD-R multi-border; **DVD Media**: stamped (single or dual layer, single sided), DVD+ RW, DVD+ R, DVD-R, DVD-RW	
	Data Transfer Rates - Write	CD-R write — 600 KB/s (4X) CD-R write — 1200 KB/s (8X) CD-R write — 1800 KB/s (12X) CD-R write — 2400 KB/s (16X) CD-R write — 3600 KB/s (24X) CD-R write — 4800 KB/s (32X) CD-R write — 6000 KB/s (40X) CD-R write — 7200 KB/s (48X) CD-RW write — 600 KB/s (4X) CD-RW write —1500 KB/s (10X) CD-RW write — 2400 KB/s (16X) CD-RW write —3600 KB/s (24X)	
	Media and Formats - Write	**CD Formats**: CD-DA, CD-ROM (Mode 1), CD-ROM XA (Mode 2, Form 1 and 2), Mixed mode, CD-Extra, CD-I FMV, Video CD, CD-Plus; **CD Media**: CD-R; CD-RW	
	Write Methods	Disc-at-once, session-at-once,, track-at-once, incremental fixed and variable packet, multisession	
	Data Transfer Modes	PIO Mode 4 (16.6 MB/s); Multi-word DMA mode 2 (16.6 MB/s); UltraDMA Mode 2 (33.3 MB/s)	
	Access Times (typical reads, including settling)	DVD-ROM Single Layer Random	120 ms
		CD-ROM Mode 1	110 ms
		Full Stroke DVD	210 ms
		Full Stroke CD	160 ms
	Start-up Time (typical)	<4 seconds (single session), <30 seconds (multisession)	
	Stop Time (typical)	4 s	
	Write Buffer Size	2 MB (minimum)	
	Audio Output	Line-Out	0.7 VRMS
		Signal-to-Noise Ratio	74 dB
		Channel Separation	65 dB
	Configuration Jumper Block	Master, slave, and cable select modes	
	Operating Conditions	Temperature	41° to 122° F/5° to 50° C
		Humidity	10% to 85%
	Approvals / Environmental	MPC-3 compliant, multi-read requirements, UL 1950, ACA AS/NZS 3548, ANSI C63.4–1992, ATAPI Spec SFF-8020, ATA Spec X3T9.2, CB Bulletin No. 92A, CSA C22.2 No. 950-1995, C.I.S.P.R. Pub 22, DHHS/FDA, EMKO-TSE 07/94, TUV, EN60825-1	
	Operating Systems Supported	Microsoft Windows 2000, Windows XP	

	Supplied software	Intervideo WInDVD 4.0: Play DVD movies; Roxio Easy CD Creator 5.3.4: Create or copy CDs and DVDs, including music and data CDs, and data DVDs; Dantz Retrospect Express 6.0: Back up systems to CD, DVD, or tape media.
16/10/40+4/2.4/8x 4.7 GB DVD+ RW – 300i	**Capacity**	4.7 GB DVD disc / 700 MB CD disc
	Dimensions (HxWxD)	1.66 x 5.83 x 7.74 in/4.23 x 14.6 x 19.8 cm
	Weight	2.3 lb/1.06 kg
	Interface	ATAPI/EIDE
	Mounting Orientation	Horizontal (80 or 120 mm discs) or vertical (120 mm discs only)
	Data Transfer Rates – Read	Digital audio extraction (minimum) —1,200 KB/s (8X) CD read — up to 6,000 KB/s (40X) DVD read — up to 10,800 KB/s (8X)
	Media and Formats - Read	**CD formats**: CD-DA (Red Book), CD-ROM (Modes 1 and 2 - Yellow Book), CD-ROM XA (Mode 2, Forms 1 and 2), CD-I (FMV), Photo CD (single and multi-session), Video CD, CD-Text, CD Extra; **CD media**: stamped, CD-R, CD-RW **DVD formats**: DVD-ROM, DVD-Video (with application support); **DVD media**: stamped (single or dual layer, single sided), DVD+ RW, DVD+ R, DVD-R, DVD-RW
	Data Transfer Rates - Write	DVD+R write — 5,412 KB/s (4X) DVD+RW write or rewrite — 3,247 KB/s (2.4X) CD-R write — 600 KB/s (4X) CD-R write — 1200 KB/s (8X) CD-R write — 2,400 KB/s (16X) CD-RW write — 600 KB/s (4X) CD-RW write —1500 KB/s (10X)
	Media and Formats - Write	**CD formats**: CD-DA (Red Book), CD-ROM (Modes 1 and 2 - Yellow Book), CD-ROM XA (Mode 2, Forms 1 and 2), CD-I (FMV), Photo CD (single and multi-session), Video CD, CD-Text, CD Extra; **CD media**: CD-R, CD-RW **DVD formats**: DVD-ROM, DVD-Video (with application support); **DVD media**: DVD+ RW, DVD+ R
	Write Methods	Disc-at-once, track-at-once, incremental fixed and variable packet, random access write (DVD+RW only), sequential write (DVD +R, +RW)
	Data Transfer Modes	ATA PIO mode 4—16.7-Mbps, ATA UltraDMA mode 2—33-Mbps (default)
	Access Times (typical reads, including settling)	DVD-ROM Single Layer Random — 140 ms CD-ROM Random — 120 ms CD-ROM Full stroke — 200 ms
	Start-up Time (typical)	< 5 s
	Stop Time (typical)	< 6 s
	Write Buffer Size	2 MB (minimum)
	Audio Output	Line-Out — 0.7 VRMS Signal-to-Noise Ratio — 75 dB Channel Separation — 60 dB
	Configuration Jumper Block	Master, slave, and cable select modes
	Operating Conditions	Temperature — 32° to 122° F/0° to 50° C Humidity — 10% to 70% (non-condensing)

Intel PRO/100 + Management Adapter	Network Interface	10Base-T or 100Base-TX	
	Expansion Bus Architecture	PCI 2.2	
	Network Transfer Rate	10Base-T (Half-Duplex)	10-Mb/s
		10Base-T (Full-Duplex)	20-Mb/s
		100Base-TX (Half-Duplex)	100-Mb/s
		100Base-TX (Full-Duplex)	200-Mb/s
	Connectors	RJ-45	
	Standards Compliance	10-Mb/s Ethernet	IEEE 802.3
		100-Mb/s Ethernet	IEEE 802.3μ
	I/O Address	Auto-configured	
	Remote Wakeup	Yes	
	Operating Temperature	0° to 55° F/10° to 35° C	
	Operating Humidity (non-condensing)	85% at 131° F/55° C	
	Operating Altitude	10,000 ft/3,048 m	
	Communication Processor	Intel 82559	
	OS Driver Support	Windows XP Pro Windows NT 4.0	NDIS 3.0, 4.0 Compliant
		Windows 95, 98, 2000,	NDIS 3.0, 4.0, 5.0 Compliant
		Novell®NetWare®Server v. 3.x, 4.x and 5.0	ODI Compliant
		SunSoft Solaris™	Not supported
		SCO®UnixWare®, OpenDesktop, OpenServer®	Supported

Broadcom Gigabit Ethernet Adapter	Network Interface	10Base-T or 100Base-TX	
	Expansion Bus Architecture	PCI 2.2	
	Network Transfer Rate	10Base-T (Half-Duplex)	10-Mb/s
		10Base-T (Full-Duplex)	20-Mb/s
		100Base-TX (Half-Duplex)	100-Mb/s
		100Base-TX (Full-Duplex)	200-Mb/s
		1000Base-TX (Half-Duplex)	1000-Mb/s
		1000Base-TX (Full-Duplex)	2000-Mb/s
	Connectors	RJ-45	
	Standards Compliance	10-Mb/s Ethernet	IEEE 802.3
		100-Mb/s Ethernet	IEEE 802.3μ
		1000-Mb/s Ethernet	IEEE 80
	I/O Address	Auto-configured	
	Remote Wakeup	Yes	
	Operating Temperature	0° to 55° F/10° to 35° C	
	Operating Humidity (non-condensing)	85% at 131° F/55° C	
	Operating Altitude	10,000 ft/3,048 m	
	Communication Processor	Intel 82559	
	OS Driver Support	Windows XP Pro Windows NT 4.0	NDIS 3.0, 4.0 Compliant
		Windows 95, 98, 2000,	NDIS 3.0, 4.0, 5.0 Compliant
		Novell®NetWare®Server v. 3.x, 4.x and 5.0	ODI Compliant
		SunSoft Solaris™	Not supported
		SCO®UnixWare®, OpenDesktop, OpenServer®	Supported

NVIDIA Quadro NVS 200 Graphics Card

Form Factor	Low profile
Graphics Controller	Integrated Quadro4 2D/3D 128-bit graphics processor unit (GPU)
Bus Type	AGP 4x
RAMDAC	Dual 350 MHz
Memory	64 MB 166MHz 4 M x 16 SDR 6ns unified frame buffer
Connectors	Single LFH-60
Dimensions	low-profile form factor
Multi-monitor support	Dual monitors with NVIDIA's nView
nView Hardware Architecture	Dual 350MHz RAMDACs Integrated TMDS Digital Vibrance Control (DVC) 32-bit color 2048 x 1536 @ 60 Hz maximum resolution 2D rendering engine optimized for 32-, 24-, 16-, 15-, and 8-bpp modes Unified driver architecture (UDA) provides easy installation and manageability
High definition video processor	Full-screen, full-frame video playback of HDTV and DVD content DVD-ready motion compensation for MPEG-2 Independent hardware color controls for video overlay Hardware color-space conversion (YUV 4:2:2 and 4:2:0) IDCT motion compensation 5-tap horizontal by 3-tap vertical filtering 8:1 up/down scaling
Supported graphics APIs	Fully compliant with OpenGL 1.3 and DirectX 8.1
Available graphics drivers	Microsoft Windows XP and Microsoft Windows 2000, Linux See: http://www.hp.com/workstations/support

NVIDIA Quadro NVS 200 display resolutions & refresh rates

Single CRT display		
Resolution	**Maximum Refresh Rate**	**Bits per Pixel**
640 x 480	120 Hz	8, 16, 24
800 x 600	120 Hz	8, 16, 24
1024 x 768	120 Hz	8, 16, 24
1152 x 864	120 Hz	8, 16, 24
1280 x 1024	120 Hz	8, 16, 24
1600 x 1200	100 Hz	8, 16
1600 x 1200	85 Hz	8, 16, 24
1920 x 1080	100 Hz	8, 16
1920 x 1080	75 Hz	8, 16, 24
1920 x 1200	85 Hz	8, 16
1920 x 1200	70 Hz	8, 16, 24
1920 x 1440	75Hz	8, 16
1920 x 1440	60Hz	8, 16, 24
2048 x 1536	60Hz	8, 16

NVIDIA Quadro4 380 XGL Graphics Card		
	Form Factor	ATX
	Graphics Controller	NVIDIA NV18GL GPU
	Bus Type	AGP 8x Version 3.0 compliant AGP 4x/2x Version 2.0 compliant
	RAMDAC	Dual 350MHz integrated
	Memory	64MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
	Connectors	VGA DB-15 and DVI-I analog/digital monitor outputs, 4-pin mini DIN providing TV output
	Dimensions	AGP full height ATX card. 4.25 x 6.875 in (10.795 x 17.463 cm)
	Multi-monitor support	Dual monitor
	Additional product features	64 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage 128 KB BIOS 3.3V Flash ROM reprogrammable by SW Hardware Overlay Planes Hardware two-sided lighting Hardware accelerated antialiased points and lines TV Output Diamond exit rule line rasterization for improved line quality 3D Texture support Occlusion Culling Compliant with Microsoft/Intel PC2001 Workstation requirements Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications DDC2B+ Monitor support for Windows 2000 and Windows XP ACPI Version 1.0b Power Management support (all modes)
	AGP 8x Version 3.0 compliant and 2x/4x Version 2.0 compliant including	Sideband Addressing AGP Texturing (Execute Mode) Fast writes support
	NV18GL GPU featuring:	275 MHz engine clock rate 250 MHz memory clock rate 128-bit memory interface VGA controller Dual integrated display controllers supporting up to 1920x1440 @ 85Hz and 2048x1536 @ 75Hz on both displays 4 parallel pixel pipelines 2 parallel geometry engines nfiniteFX II programmable vertex shader technology and NVIDIA OpenGL extensions Full hardware support for NVIDIA Cg shader programming language
	Supported graphics APIs	OpenGL 1.3 (and OpenGL 2.0 when available) ICD with immediate mode support for all OGL primitive types DirectX 8 and above
	Available graphics drivers	HP-tested Windows 2000, HP-tested Windows XP, HP-tested Linux (1st Calendar Quarter 2003) HP qualified drivers may be preloaded or available from the HP support web site: http://www.hp.com/workstations/support

NVIDIA Quadro4 380 XGL Graphics Card display resolutions & refresh rates

Resolution	Monitor 1, 2 Analog/Digital Maximum Refresh Rate	Bits per Pixel
640x480	240Hz/240Hz	8, 16, 24,32
800x600	240Hz/200Hz	8, 16, 24,32
1024x768	170Hz/140Hz	8, 16, 24,32,
1152x864	170Hz/100Hz	8, 16, 24,32
1280x720	150Hz/120Hz	8, 16, 24,32
1280x960	150Hz/85Hz	8, 16, 24,32
1280x1024	150Hz/75Hz	8, 16, 24,32
1600x900	120Hz/75Hz/ NoDigitalDisplaySupport (unbold)	8, 16, 24,32
1600x1024	100Hz/72Hz/ NoDigitalDisplaySupport	8, 16, 24,32
1600x1200	120Hz/60Hz/ NoDigitalDisplaySupport	8, 16
1600x1200	100Hz/60Hz/ NoDigitalDisplaySupport	24,32
1920x1080	100Hz/ NoDigitalDisplaySupport	8, 16
1920x1080	85Hz/ NoDigitalDisplaySupport	24,32
1920x1200	100Hz/ NoDigitalDisplaySupport	8, 16
1920x1200	85Hz/ NoDigitalDisplaySupport	24,32
1920x1440	85Hz/ NoDigitalDisplaySupport	8, 16
1920x1440	75Hz/ NoDigitalDisplaySupport	24,32
2048x1536	75Hz/ NoDigitalDisplaySupport	8, 16
2048x1536	60Hz/ NoDigitalDisplaySupport	24,32

ATI FIREGL Z1-128p Graphics Card	Form Factor	ATX
	Graphics Controller	ATI FGL 9700 GPU
	Bus Type	AGP-Pro50 1x/2x/4x/8x Version 3.0 compliant
	RAMDAC	Dual 400MHz / 30-bit
	Memory	256MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
	Connectors	Dual DVI-I analog/digital monitor outputs
	Dimensions	Single AGP/ATX card. 230.28mm x 107.96mm
	Multi-monitor support	Dual Screen output for resolutions up to 2x2048x1536x32 bit
	Additional product features	256MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage 64-KB BIOS Serial Flash ROM, reprogrammable by SW, 3.3V only, no Jumpers 2D and 3D acceleration provided for 16-bit and 32-bit RGB? modes Hardware cursor with full color alpha channel 16/32 bit Z buffer, 16/32 bit W-buffer, 8-bit stored alpha and 8-bit Stencil planes Bus mastering support for 2D/3D display lists and local memory vertex list execution Hardware lighting support for up to 8 lights Bilinear, Trilinear and Anisotropic texturing Cubic Environment and Perturbation Bump Mapping Projective Texture, 3D Texture and Video Texture support Full Scene Anti-Aliasing (FSAA) support with up to 6 subsamples Video Engine supports YCrCb (4:2:2, 4:1:0, 4:2:0) to RGB conversion Video scaling and up to 4x4 tap filtering supported for all YUV and RGB16/32 formats Per pixel quad buffering on all screen resolutions VESA compliant Stereoscopic Interface on MiniDin Connector Compliant with Microsoft/Intel PC2001 Workstation requirements Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications DDC2B+ Monitor support on all OS platforms ACPI Version 1.0b Power Management support (all modes)
	AGP1x/2x/4x/8x Version 3.0 compliant including	Sideband Addressing AGP Texturing (Execute Mode) AGP Read and AGP Write Support 8X Fast write support
	FGL™ 9700 GPU featuring:	2VGA controller supporting full standard feature set 2D Engine with 128-bit datapath processing multiple pixels per clock PIXEL TAPESTRY III, 3D rendering engine utilizing 2 parallel pipelines with two texture blending units each capable, of handling up to 8 texels in a single pass, delivering 2.4 Gigatexels/s fill rate CHARISMA ENGINE III, geometry unit utilizing 4 vertex processing engines, capable of executing two instructions per clock cycle each, thus yielding up to 200 million transformed, clipped and lit triangles per second. VIDEO IMMERSION III, industry leading video technology supporting MPEG 2 encode/decod Dual independent display controllers with 4K x 4K address space each of up to 20 GB per second
	Supported graphics APIs	OpenGL 1.3 ICD with immediate mode support for all OGL primitive types DirectX 8.1
	Available graphics drivers	Windows 2000 Windows XP Linux HP qualified drivers may be preloaded or available from the HP support web site: See: http://h20000.www2.hp.com/bizsupport/TechSupport/Product.jsp?prodTypeId=12454&prodCatId=296719&locale=en_US&taskId=135

ATI FIREGL Z1-128p Graphics Card display, resolutions & refresh rates

	CRT Display (Single or Dual)	
Resolution	**Maximum Refresh Rate**	**Bits per Pixel**
640x480	100Hz	16, 24, 32
800x600	100Hz	16, 24, 32
1024x768	100Hz	16, 24, 32
1152x864	100Hz	16, 24, 32
1280x960	100Hz	16, 24, 32
1280x1024	100Hz	16, 24, 32
1600x1000	100Hz	16, 24, 32
1600x1024	76Hz	16, 24, 32
1600x1200	100Hz	16, 24, 32
1792x1344	100Hz	16, 24, 32
1920x1080	100Hz	16, 24, 32
1920x1200	100Hz	16, 24, 32
2048x1536	85Hz	16, 24, 32
	Digital Display (Single or Dual)	
Single CRT Display Resolution	**Maximum Refresh Rate**	**Bits per Pixel**
640x480	75Hz	16, 24, 32
800x600	75Hz	16, 24, 32
1024x768	75Hz	16, 24, 32
1280x1024	75Hz	16, 24, 32
1600x1000	60Hz	16, 24, 32
1600x1200	60Hz	16, 24, 32
1920x1080	60Hz	16, 24, 32
1920x1200	60Hz	16, 24, 32

NVIDIA Quadro4 750 XGL Graphics Card

Form Factor	ATX
Graphics Controller	Integrated Quadro4 2D/3D 128-bit graphics processor unit
Bus Type	AGP4x
RAMDAC	350 MHz dual
Memory	128 MB 275 MHz 4Mx32DDR 5ns
Connectors	1 HD15 (VGA), 1 DVI-I
Dimensions (LxWxH)	9.75 x 6.50 x 2.00 in/24.77 x 16.51 x 5.08 cm
Multi-monitor support	Dual monitors supported through NVIDIA nView with 2048 x 1536 resolution per display
Additional product features	Features hardware overlay planes and hardware antialiased lines Offers two-sided lighting Full-scene antialiasing Provides second-generation occlusion culling Delivers 2048 x 1536 resolution per display OpenGL quad-buffered stereo
XGL GPU Special Features:	Integrated Transformation & Lighting (T&L) Fully programmable nfiniteFX II Graphics Engine
Lightspeed Memory Architecture II	Supports 128 MB of DDR unified graphics memory Uses memory at peak efficiency by dynamically allocating it among graphics subsystems, increasing performance
Supported graphics APIs	OpenGL 1.3 ICD with immediate mode support for all OGL primitive types DirectX 8
Available graphics drivers	HP-tested Windows XP HP-tested Windows 2000 HP qualified drivers may be preloaded or available from the HP support Web site: http://www.hp.com/workstations/support

NVIDIA Quadro4 750 XGL display resolutions & refresh rates

Single CRT display

Resolution	Maximum Refresh Rate	Bits per Pixel
640 x 480	120 Hz	8, 16, 24
800 x 600	120 Hz	8, 16, 24
1024 x 768	120 Hz	8, 16, 24
1152 x 864	120 Hz	8, 16, 24
1280 x 1024	120 Hz	8, 16, 24
1600 x 1200	100 Hz	8, 16
1600 x 1200	85 Hz	8, 16, 24
1920 x 1080	100 Hz	8, 16
1920 x 1080	75 Hz	8, 16, 24
1920 x 1200	85 Hz	8, 16
1920 x 1200	70 Hz	8, 16, 24
1920 x 1440	75 Hz	8, 16
1920 x 1440	60 Hz	8, 16, 24
2048 x 1536	60 Hz	8, 16

NVIDIA Quadro4 980 XGL Graphics Card

Form Factor	ATX
Graphics Controller	NVIDIA NV25GL GPU
Bus Type	AGP 8X
RAMDAC	Dual 350MHz integrated
Memory	128MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
Connectors	2 DVI-I analog/digital monitor outputs, 1 3-pin Mini DIN stereo output
Dimensions	AGP full height ATX card. 4.25 x 8.55 in (10.795 x 21.59 cm)
Multi-monitor support	Dual integrated display controllers supporting up to 1920x1440 @ 85Hz on both displays
Additional product features	128 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage 128 KB BIOS 3.3V Flash ROM reprogrammable by SW Hardware Overlay Planes Hardware two-sided lighting Hardware accelerated antialiased points and lines Quad-buffered Stereo Diamond exit rule line rasterization for improved line quality 3D Texture support Occlusion Culling Frame synchronization Compliant with Microsoft/Intel PC2001 Workstation requirements Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications DDC2B+ Monitor support on all OS platforms ACPI Version 1.0b Power Management support (all modes)
AGP1x/2x/4x Version 2.0 compliant including	Sideband Addressing AGP Texturing (Execute Mode) Fast writes support
NV25GL GPU featuring:	300 MHz engine clock rate 325 MHz memory clock rate 128-bit memory interface VGA controller 4 parallel pixel pipelines 2 parallel geometry engines nfiniteFX II programmable vertex and pixel shader technology
Supported graphics APIs	OpenGL 1.3 ICD with immediate mode support for all OGL primitive types DirectX 8
Available graphics drivers	HP-tested Windows 2000 HP-tested Windows XP HP-tested Linux HP qualified drivers may be preloaded or available from the HP support web site: http://www.hp.com/workstations/support

NVIDIA Quadro4 980 XGL Graphics Card display resolutions & refresh rates

Resolution	Monitor 1, 2 Analog/Digital Maximum Refresh Rate	Bits per Pixel
640x480	240Hz/240Hz	8, 16, 24,32
800x600	240Hz/200Hz	8, 16, 24,32
1024x768	170Hz/140Hz	8, 16, 24,32
1152x864	170Hz/100Hz	8, 16, 24,32
1280x720	150Hz/120Hz	8, 16, 24,32
1280x960	150Hz/85Hz	8, 16, 24,32
1280x1024	150Hz/75Hz	8, 16, 24,32
1600x900	120Hz/75Hz	8, 16, 24,32
1600x1024	100Hz/72Hz	8, 16, 24,32
1600x1200	120Hz/60Hz	8, 16
1600x1200	100Hz/60Hz	24,32
1920x1080	100Hz/ NoDigitalDisplaySupport	8, 16
1920x1080	85Hz/ NoDigitalDisplaySupport	24,32
1920x1200	100Hz/ NoDigitalDisplaySupport	8, 16
1920x1200	85Hz/ NoDigitalDisplaySupport	24,32
1920x1440	85Hz/ NoDigitalDisplaySupport	8, 16
1920x1440	75Hz/ NoDigitalDisplaySupport	24,32
2048x1536	75Hz/ NoDigitalDisplaySupport	8, 16
2048x1536	60Hz/ NoDigitalDisplaySupport	24,32

NVIDIA Quadro4 900 XGL Graphics Card		
	Form Factor	ATX
	Graphics Controller	NVIDIA NV25GL GPU
	Bus Type	AGP 1x/2x/4x Version 2.0 compliant
	RAMDAC	Dual 350MHz integrated
	Memory	128MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
	Connectors	2 DVI-I analog/digital monitor outputs, 1 3-pin Mini DIN stereo output
	Dimensions	AGP full height ATX card. 4.25 x 8.5 in/10.80 x 21.6 cm
	Multi-monitor support	Dual integrated display controllers supporting up to 1920x1440 @ 85Hz on both displays
	Additional product features	128 MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage 128 KB BIOS 3.3V Flash ROM reprogrammable by SW Hardware Overlay Planes Hardware two-sided lighting Hardware accelerated antialiased points and lines Quad-buffered Stereo Diamond exit rule line rasterization for improved line quality 3D Texture support Occlusion Culling Frame synchronization Compliant with Microsoft/Intel PC2001 Workstation requirements Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications DDC2B+ Monitor support on all OS platforms ACPI Version 1.0b Power Management support (all modes)
	AGP1x/2x/4x Version 2.0 compliant including	Sideband Addressing AGP Texturing (Execute Mode) Fast writes support
	NV25GL GPU featuring:	300 MHz engine clock rate 325 MHz memory clock rate 128-bit memory interface VGA controller 4 parallel pixel pipelines 2 parallel geometry engines nfiniteFX II programmable vertex and pixel shader technology
	Supported graphics APIs	OpenGL 1.3 ICD with immediate mode support for all OGL primitive types DirectX 8
	Available graphics drivers	HP-tested Windows XP HP-tested Windows 2000 HP-tested Linux HP qualified drivers may be preloaded or available from the HP support Web site: http://www.hp.com/workstations/support

NVIDIA Quadro4 900 XGL Graphics Card display resolutions & refresh rates

Resolution	Monitor 1, 2 Analog/Digital Maximum Refresh Rate	Bits per Pixel
640x480	240Hz/240Hz	8, 16, 24
800x600	240Hz/200Hz	8, 16, 24
1024x768	170Hz/140Hz	8, 16, 24
1152x864	170Hz/100Hz	8, 16, 24
1280x720	150Hz/120Hz	8, 16, 24
1280x960	150Hz/85Hz	8, 16, 24
1280x1024	150Hz/75Hz	8, 16, 24
1600x900	120Hz/75Hz	8, 16, 24
1600x1024	100Hz/72Hz	8, 16, 24
1600x1200	120Hz/60Hz	8, 16
1600x1200	100Hz/60Hz	24
1920x1080	100Hz/ NoDigitalDisplaySupport	8, 16
1920x1080	85Hz/ NoDigitalDisplaySupport	24
1920x1200	100Hz/ NoDigitalDisplaySupport	8, 16
1920x1200	85Hz/ NoDigitalDisplaySupport	24
1920x1440	85Hz/ NoDigitalDisplaySupport	8, 16
1920x1440	75Hz/ NoDigitalDisplaySupport	24
2048x1536	75Hz/ NoDigitalDisplaySupport	8, 16
2048x1536	60Hz/ NoDigitalDisplaySupport	24

ATI FIR GL X1-256p Graphics Card

Form Factor	ATX
Graphics Controller	ATI FGL 9700 GPU
Bus Type	AGP-Pro50 1x/2x/4x/8x Version 3.0 compliant
RAMDAC	Dual 400MHz / 30-bit
Memory	256MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage
Connectors	Dual DVI-I analog/digital monitor outputs
Dimensions	Single AGP/ATX card. 230.28mm x 107.96mm
Multi-monitor support	Dual Screen output for resolutions up to 2x2048x1536x32 bit
Additional product features	256MB DDR SDRAM unified frame buffer, Z-buffer and Texture storage 64 KB BIOS Serial Flash ROM, reprogrammable by SW, 3.3V only, no Jumpers 2D and 3D acceleration provided for 16-bit and 32-bit RGB? modes Hardware cursor with full color alpha channel 16/32 bit Z buffer, 16/32 bit W-buffer, 8-bit stored alpha and 8-bit Stencil planes Bus mastering support for 2D/3D display lists and local memory vertex list execution Hardware lighting support for up to 8 lights Bilinear, Trilinear and Anisotropic texturing Cubic Environment and Perturbation Bump Mapping Projective Texture, 3D Texture and Video Texture support Full Scene Anti-Aliasing (FSAA) support with up to 6 subsamples Video Engine supports YCrCb (4:2:2, 4:1:0, 4:2:0) to RGB conversion Video scaling and up to 4x4 tap filtering supported for all YUV and RGB16/32 formats

	Per pixel quad buffering on all screen resolutions VESA compliant Stereoscopic Interface on MiniDin Connector Compliant with Microsoft/Intel PC2001 Workstation requirements Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications DDC2B+ Monitor support on all OS platforms ACPI Version 1.0b Power Management support (all modes)
AGP1x/2x/4x/8x Version 3.0 compliant including:	Sideband Addressing AGP Texturing (Execute Mode) AGP Read and AGP Write Support 8X Fast write support
FGL 9700 GPU featuring:	VGA controller supporting full standard feature set 2D Engine with 128-bit datapath processing multiple pixels per clock PIXEL TAPESTRY III, 3D rendering engine utilizing 2 parallel pipelines with two texture blending units each capable, of handling up to 8 texels in a single pass, delivering 2.4 Gigatexels/s fill rate CHARISMA ENGINE III, geometry unit utilizing 4 vertex processing engines, capable of executing two instructions per clock cycle each, thus yielding up to 200 million transformed, clipped and lit triangles per second. VIDEO IMMERSION III, industry leading video technology supporting MPEG 2 encode/decode Dual independent display controllers with 4K x 4K address space each 256-bit external frame buffer interface providing memory bandwidth of up to 20 GB per second
Supported graphics APIs	OpenGL 1.3 ICD with immediate mode support for all OGL primitive types DirectX 8.1
Available graphics drivers	Windows 2000 Windows XP Linux HP qualified drivers may be preloaded or available from the HP support web site: See: http://h20000.www2.hp.com/bizsupport/TechSupport/Product.jsp?prodTypeId=12454&prodCatId=296719&locale=en_US&taskId=135

ATI FIREGL X1-256p Graphics Card display, resolutions & refresh rates

	CRT Display (Single or Dual)	
Resolution	Maximum Refresh Rate	Bits per Pixel
640x480	100Hz	16, 24,32
800x600	100Hz	16, 24,32
1024x768	100Hz	16, 24,32
1152x864	100Hz	16, 24,32
1280x960	100Hz	16, 24,32
1280x1024	100Hz	16, 24,32
1600x1000	100Hz	16, 24,32
1600x1024	76Hz	16, 24,32
1600x1200	100Hz	16, 24,32
1792x1344	100Hz	16, 24,32
1920x1080	100Hz	16, 24,32
1920x1200	100Hz	16, 24,32
2048x1536	85Hz	16, 24,32

	Digital Display (Single or Dual)	
Single CRT Display Resolution	Maximum Refresh Rate	Bits per Pixel
640x480	75Hz	16, 24,32
800x600	75Hz	16, 24,32
1024x768	75Hz	16, 24,32
1280x1024	75Hz	16, 24,32
1600x1000	60Hz	16, 24,32
1600x1200	60Hz	16, 24,32
1920x1080	60Hz	16,24,32
1920x1200	60Hz	16, 24,32

NVIDIA Quadro FX2000	Form Factor	ATX
	Graphics Controller	NVIDIA NV30GL GPU
	Bus Type	AGP 8X Version 3.0 compliant
	RAMDAC	Dual 400MHz integrated
	Memory	128MB DDR2 SDRAM unified frame buffer, Z-buffer and Texture storage
	Connectors	2 DVI-I analog/digital monitor outputs, 1 3-pin Mini DIN stereo output
	Dimensions	AGP full height ATX card. 4.25 x 6.875 in (10.795 x 17.463 cm)
	Multi-monitor support	Dual integrated display controllers supporting up to 2048x1536 @ 85Hz on both displays
	Additional product features	128 MB DDR2 SDRAM unified frame buffer, Z-buffer and Texture storage 128 KB BIOS 3.3V Flash ROM reprogrammable by SW Hardware Overlay Planes Hardware two-sided lighting Hardware accelerated antialiased points and lines Quad-buffered Stereo Diamond exit rule line rasterization for improved line quality 3D Texture support Occlusion Culling Dual Link DVI on one output enabling driving digital displays up to 2048x1536 Compliant with Microsoft/Intel PC2001 Workstation requirements Video Timings compliant with VESA DMT 1.0 and VESA GTF 1.0 specifications DDC2B+ Monitor support on all OS platforms ACPI Version 1.0b Power Management support (all modes)
	AGP8xVersion 3.0 compliant including	Sideband Addressing AGP Texturing (Execute Mode) Fast write support
	NV30GL GPU featuring	400 MHz engine clock rate 400 MHz memory clock rate 128-bit memory interface VGA controller 8 parallel pixel pipelines 3 parallel geometry engines nfiniteFX II programmable vertex and pixel shader technology
	Supported graphics APIs	OpenGL 1.3 ICD with immediate mode support for all OGL primitive types DirectX 8,9
	Available graphics drivers	Windows 2000 Windows XP HP-tested Linux HP qualified drivers may be preloaded or available from the HP support Web site: See: http://h20000.www2.hp.com/bizsupport/TechSupport/Product.jsp?prodTypeId=12454&prodCatId=296719&locale=en_US&taskId=135 See: http://www.hp.com/workstations/support NOTE: These Web sites are available in English only.

NVIDIA Quadro FX2000 Display Resolutions & Refresh Rates

Resolution	Monitor 1, 2 Analog/Digital Maximum Refresh Rate	Bits per Pixel
640x480	240Hz/240Hz	8, 16, 32
800x600	240Hz/200Hz	8, 16, 32
1024x768	200Hz/140Hz	8, 16, 32
1152x864	170Hz/100Hz	8, 16, 32
1280x720	150Hz/120Hz	8, 16, 32
1280x960	150Hz/85Hz	8, 16, 32
1280x1024	150Hz/85Hz	8, 16, 32
1600x900	120Hz/75Hz	8, 16, 32
1600x1024	100Hz/72Hz	8, 16, 32
1600x1200	120Hz/60Hz	8, 16
1600x1200	100Hz/60Hz	32
1920x1080	100Hz/60Hz in Dual Link Mode	8, 16
1920x1080	85Hz/60Hz in Dual Link Mode	32
1920x1200	100Hz/60Hz in Dual Link Mode	8, 16
1920x1200	85Hz/60Hz in Dual Link Mode	32
1920x1440	85Hz/60Hz in Dual Link Mode	8,16, 32
2048x1536	85Hz/60Hz in Dual Link Mode	8, 16, 32

HP L1825 Flat Panel Monitor (Carbon/Silver)

Display Type	TFT large viewing angle
Viewable Image Size	45.9 cm/18.1 in maximum viewable
Screen Opening (W x H)	14.2 x 11.4 in/36.2 x 28.9 cm
Viewing Angle	160 degrees horizontal/160 degrees vertical (10:1 minimum contrast ratio)
Pixel Pitch	0.281 mm
Pixel Clock Speed	135 MHz
Brightness	250 nits (cd/m2)
Contrast Ratio	350:1 (typical
Response Rate	30 ms (typical rise + fall)
Horizontal Frequency (kHz)	30 to 82 kHz
Vertical Frequency (Hz)	56 to 75 Hz
Color Depth Support	16.7 million colors
Graphics Controller	Genesis gm5020
Factory Preset Modes	15
Graphic Preset Modes (non-interlaced)	640 x 480 @ 60 Hz, 72 Hz, 75 Hz 800 x 600 @ 56 Hz, 60 Hz, 75Hz 1024 x 768 @ 60 Hz, 75 Hz 1280 x 1024 @ 60 Hz, 75 Hz
Mac Compatible Modes (adapter required)	832 x 624 @ 75 Hz 1152 x 870 @75 Hz
Text Mode	720 x 400 @ 70 Hz
VGA Mode	640 x 480 @ 60 Hz, 72 Hz
User-Programmable Modes	15
Anti-Glare/Anti-Static	Yes/Yes
Asset Control	Yes (accessible on HP desktops featuring Intelligent Manageability)
Plug and Play	Yes (supports VESA DDC2B; PC2001 compliant)
Protective Panel	No

Kensington Lock-ready	Yes	
Accessories Included	VGA cable, DVI-D cable	
VESA Mounting	100 mm x 100 mm screw-mounting option; pedestal is attached	
VESA External Mounting	Yes (standard 4-hole pattern, 100 mm)	
Detachable Base	Yes	
Tilt	Yes (–5° to + 35°)	
Swivel	Yes (–35° to + 35°)	
Height Adjustable	Yes (130 mm adjustment range)	
Portrait Mode Supported	Yes	
Touchscreen Option	No	
Fail Safe Mode	Yes	
Icon Based On-Screen Controls	Yes	
User Controls	Brightness, contrast	Yes
	Positioning	Yes
	Color temperature	Yes (6500k, 9300k, User)
	Individual color control	Yes
	Serial number display	Yes
	Full screen resolutions	Yes (640 x 480, 800 x 600)
	Clock	Yes
	Clock phase	Yes
	Monitor management	No
	Recall	No
	Audio recall	No
	Input selection	Yes
	Factory reset	Yes
Language Selection	English	Yes
	Spanish	Yes
	French	Yes
	German	Yes
	Simplified Chinese	Yes
	Italian	Yes
Agency Approvals/ Certifications	Australian ACA Approval	Yes
	Canadian Requirements/CSA	Yes
	CE Marking	Yes
	China CCIB/CCEE Approval	Yes
	CISPR Requirements	Yes
	Eastern European Approvals	Yes
	Energy Star Compliant	Yes
	FCC Approval	Yes
	German Ergonomic (TUV and GS Mark)	Yes
	ISO 9241-3,7,8 VDT Guidelines	Yes
	ISO 13406-2 Compliant (Pixel Defect Guidelines)	Yes
	Mexican NOM Approval	Yes
	MIC Requirements (New Zealand)	Yes
	MPR-II Compliant	Yes

		Nordic Approvals (Nemko, Fimko, Demko, Semko)	Yes
		PC2001 Compliant	Yes
		PC99 Certified	Yes
		S. Korean MIC Approval	Yes
		Taiwan BSMI Approval	Yes
		TCO 99 (emissions, ergonomics, environment)	Yes
		TUV-Ergo	Yes
		UL Listed	Yes
		VCCI Approvals	Yes
		Windows Certification	Microsoft Windows 98, Windows 2000, and Windows XP
	Input Impedance	75 ohms ± 10%	
	Input Signal	Two connectors: one 15-pin mini D-sub analog VGA; and one DVI-I (VGA analog or digital)	
	Sync Input	Separate sync (HSYNC/VSYNC); composite sync, Sync on Green	
	Power Supply ALS	Auto-ranging, 90 to 264 VAC; internal power supply, 60 Hz	
	Power Rating	Maximum Mode	< 60 W
		Power Saving Mode	< 5 W
		Off Mode	< 5 W
	Dimensions (H x W x D)	With stand - min height	14.8 x 15.8 x 8.2 in/37.6 x 40.2 x 20.8 cm
		With stand - max height	19.9 x 15.8 x 8.2 in/50.6 x 40.2 x 20.8 cm
		Without stand	13.5 x 15.8 x 2.9 in/34.2 x 40.2 x 7.3 cm
	Approximate Weight	With height-adjustable stand	22.9 lb/10.4 kg
		Without stand	13.6 lb/6.2 kg
	Temperature	Operating	32° to 95° F/0° to 35° C
		Non-operating	–4° to 140° F/–20° to 60° C
	Humidity	Operating	20% to 80%
		Non-operating	8% to 85%
	Warranty	Limited three years parts, labor, and on-site service, including backlight. Availability varies by region. Consult HP Customer Service for details.	
	Graphic Controller Compatibility	Compatible with "VESA Video Signal Standard (VSIS) Compliant" video cards.	
		NOTE: Features are subject to change without notice.	
HP L1925 Flat Panel Monitor (Carbon/Silver)	**Panel**	**Type**	Thin film transistor (TFT)
		Viewable Image Area (diagonal)	19 in (48.25 cm) maximum viewable
		Screen Opening (WxH)	14.9 x 11.9 in (37.8 x 30.3 cm)
		Viewing Angle (typical)	170 degrees horizontal/170 degrees vertical (10:1 minimum contrast ratio)
		Brightness (typical)	Up to 250 nits (cd/m2)
		Contrast Ratio (typical)	Up to 500:1 (typical)
		Response Rate (typical)	<20 ms (typical rise + fall)
		Pixel Pitch	0.294 mm
		Color Depth Support	16.7 million colors
	Video Input	**Plug and Play**	Yes (supports VESA DDC2B; PC2001 compliant)
		Input Signal	Two connectors: one 15-pin mini D-sub analog VGA;

		and one DVI-I (VGA analog or digital)
	Input Impedance	75 ohms ± 2%
	Sync Input	Separate sync (HSYNC/VSYNC); composite sync, Sync on Green
	Video Cable	VGA and DVI-D
	Video Cable Length	78 in (2.0 m)
Signal Interface/ Performance	Horizontal Frequency	30 to 82 kHz
	Vertical Frequency	56 to 75 Hz
	Graphics Controller	Pixelworks 131
	Native Resolution	1280x1024@75Hz analog 1280x 1024@60Hz digital
	Maximum Resolution (Analog)	1280x1024@75Hz analog
	Maximum Resolution (Digital)	1280x1024@75Hz analog
On Screen Display (OSD) Controls	Preset VESA Graphic Modes (non-interlaced)	640 x 480 @ 60 Hz, 72 Hz, 75 Hz 800 x 600 @ 60 Hz, 72 Hz, 75 Hz 1024 x 768 @ 60 Hz, 75 Hz 1280 x 1024 @ 60 Hz, 75 Hz
	Preset MAC Mode	832 x 624 @ 75 Hz 1152 x 870 @75 Hz
	Preset VGA Mode	640 x 480 @ 60 Hz, 72 Hz
	Preset SUN Mode	1152x900@66Hz
	Fail Safe Mode	Yes (limits out of range signal messages)
	Maximum Pixel Clock Speed	140 MHz
	User Programmable Modes	Yes, 10
	Anti-Glare	Yes
	Anti-Static	Yes
	AssetControl	Yes (accessible on HP/Compaq desktops featuring Intelligent Manageability)
	Default Color Temperature	Yes (6500k, 9300k, Custom User)
	Buttons or Switches	Power on/off; 4-button OSD; second level OSD buttons include auto adjust and dual-input switch
	Languages	English, Spanish, French, German, Dutch, Italian
	User Controls	Size and Positioning Contrast Brightness Clock, Clock Phase Selectable Color Temperature Input Selection Factory Reset Individual Color Contrast Full-screen Resolution
Power	Power Supply	Auto-ranging, 90 to 265 VAC; internal power supply, 47.5-63 Hz
	Input Power	100 ~ 240 VAC
	Nominal Current	1.5 A maximum
	Frequency	50 ~ 60 Hz
	Average	33 watts when displaying standard office software
	Maximum	< 40 watts

	Power Saving	< 2 watts	
	Off Mode	< 1 watts (switch off)	
	Power Cable Length	70 in (1.8 m); non-captive	
Mechanical	Dimensions (H x W x D)	Unpacked w/ stand minimum height	14.8 x 16.4 x 8.2 in (39.8 x 41.6 x 20.8 cm)
		Unpacked w/ stand maximum height	20 x 16.4 x 8.2 in (50.8 x 41.6 x 20.8 cm)
		Base Area (Footprint d x w)	8.2 x 12.2 in (20.8 x 30.9 cm)
		Panel only (w/o stand) (h x w x d)	13.5 x 16.4 x 2.6 in (34.2 x 41.6 x 6.6 cm)
		Packaged	26.0 x 26.0 x 26.0 in (66.0 x 66.0 x 66.0 cm)
	Weight	Unpacked w/ stand	17.6 lb (8 kg)
		Unpacked w/o stand	12 lb (5.5 kg)
		Packaged	23.5 l (10.7 kg)
	Tilt Range	-5 degrees to +20 degrees	
	Swivel Range	± 45 degrees horizontal swivel	
	Height Adjustable	Yes (4.3 in/110 mm adjustment range)	
	Pivot Rotation	Yes, 90 degrees	
	Base	Ships attached and is removable after installation	
Environmental	Temperature – Operating	41° to 95° F (5° to 35° C)	
	Temperature – Non-operating	-4° to 140° F (-20° to 60° C)	
	Humidity – Operating	20% to 80%	
	Humidity – Non-operating	5% to 95%	
	Altitude – Operating	0 to 13,000 ft (0 to 4,000 m)	
	Altitude – Non-operating	0 to 40,000 ft (0 to 12,192 m)	
Options	PC Comm Station	Communication/audio hub that includes two stereo speakers (8 PMPO each), integrated microphone/dual function headset (phone and PC support), and USB port. Optional, part number 304251-008 (US) or P8814A (EMEA).	
Other	Accessories Included	VGA cable, DVI-D cable, user CD-ROM with Portrait software	
	User Guide Languages	English	
	Warranty Languages	English	
	Color	Carbon/Silver	
	VESA Mounting	Yes (swing arm/ wall mount not included; base is shipped attached and must be removed for mounting options)	
	VESA External Mounting	Yes (Standard 4 hole pattern, 100 mm)	
	Kensington Lock-ready	Yes	
Certification and Compliance	Australian ACA Approval, Canadian Requirements/CSA, CE Marking, China CCIB/CCEE Approval, CISPR Requirements, Eastern European Approvals, Energy Star Compliant, FCC Approval, German Ergonomic (TUV and GS Mark), ISO 9241-3,7,8 VDT Guidelines, ISO 13406-2 Compliant (Pixel Defect Guidelines), Mexican NOM Approval, MIC Requirements (New Zealand), MPR-II Compliant, Nordic Approvals (Nemko, Fimko, Demko, Semko), PC2001 Compliant, PC99 Certified, S. Korean MIC Approval, Taiwan BSMI Approval, TCO 03 (emissions, ergonomics, environment), TUV-Ergo, UL Listed, VCCI Approvals, Windows Certification		
Compatibility	VESA Video Signal Standard (VSIS) Compliant video cards have been tested and proven compatible for use with the HP Flat Panel Monitor L1925. The HP L1925 has been tested for use with Compaq Evo PCs and Thin Clients and Compaq D315 Business PCs.		

NOTE: Features are subject to change without notice.

	Service and Warranty	Limited three-year parts and repair labor, service provider labor, and on-site service. Next Business Day advanced exchange direct replacement service available during warranty period. Certain restrictions and exclusions apply. For details, contact HP Customer Support at 970-635-1000 (USA) or 905-206-4663 (Canada).

HP L2025 Flat Panel Monitor (Carbon/Silver)	Display Type	TFT large viewing angle
	Viewable Image Size	20.1 in (51 cm) maximum viewable
	Screen Opening (WxH)	16.2 x 22 in (41.1 x 30.9 cm)
	Viewing Angle	170 degrees horizontal/170 degrees vertical (10:1 minimum contrast ratio)
	Pixel Pitch	0.255 mm
	Pixel Clock Speed	202 MHz
	Brightness	250 nits (cd/m2) typical
	Contrast Ratio	350:1 typical
	Response Rate	25 ms typical (rise + fall)
	Color Depth Support	16.7 million colors
	Horizontal Frequency (kHz)	30 to 94 kHz (analog); 30 to 92 KHz (digital)
	Vertical Frequency (Hz)	56 to 85 Hz
	Graphics Controller	Pixelworks PW171
	Factory Preset Modes	18
	Graphic Preset Modes (non-interlaced)	1600 x 1200 @ 60 Hz, 75 Hz 1280 x 1024 @ 60 Hz, 75Hz, 85 Hz 1280 x 960 @ 60 Hz 1152 x 900 @ 66 Hz 1024 x 768 @ 60 Hz, 75 Hz, 85 Hz 800 x 600 @ 60 Hz, 85Hz 640 x 480 @ 60 Hz, 75 Hz
	Mac Compatible Modes (adapter required)	832 x 624 @ 75 Hz 1152 x 870 @ 75 Hz
	Text Mode	720 x 400 @ 70 Hz
	VGA Mode	640 x 480 @ 60 Hz
	User-Programmable Modes	18
	Anti-Glare/Anti-Static	Yes/Yes
	Asset Control	Yes (accessible on HP desktops featuring Intelligent Manageability)
	Plug and Play	Yes
	Kensington Lock-ready	Yes
	Accessories Included	VGA cable, DVI-D cable
	Protective Panel	No
	VESA Mounting	100 mm x 100 mm screw-mounting option; pedestal is attached
	VESA External Mounting	Yes (Standard 4 hole pattern, 100 mm)
	Portrait Mode Supported	No
	Touchscreen Option	No
	Detachable Base	Yes
	Tilt	Yes (–5° to + 35°)
	Swivel	Yes (–35° to + 35°)
	Height Adjustable	Yes (130 mm adjustment range)
	Fail Safe Mode	Yes
	Icon Based On-Screen Controls	Yes

User Controls	Brightness, contrast	Yes
	Positioning	Yes
	Color temperature	Yes (6500k, 9300k, User)
	Individual color control	Yes
	Serial number display	Yes
	Full screen resolutions	Yes (640 x 480, 800 x 600)
	Clock	Yes
	Clock phase	Yes
	Monitor management	No
	Recall	No
	Audio recall	No
	Video PIP	Yes (size and position)
	Input selection	Yes (includes separate direct access key for dedicated swap between inputs 1 and 2)
	Factory reset	Yes
Language Selection	English	Yes
	Spanish	Yes
	French	Yes
	German	Yes
	Simplified Chinese	Yes
	Italian	Yes
Agency Approvals/ Certifications	Australian ACA Approval	Yes
	Canadian Requirements/CSA	Yes
	CE Marking	Yes
	China CCIB/CCEE Approval	Yes
	CISPR Requirements	Yes
	Eastern European Approvals	Yes
	Energy Star Compliant	Yes
	FCC Approval	Yes
	German Ergonomic (TUV and GS Mark)	Yes
	ISO 9241-3,7,8 VDT Guidelines	Yes
	ISO 13406-2 Compliant (Pixel Defect Guidelines)	Yes
	Mexican NOM Approval	Yes
	MIC Requirements (New Zealand)	Yes
	MPR-II Compliant	Yes
	Nordic Approvals (Nemko, Fimko, Demko, Semko)	Yes
	PC2001 Compliant	Yes
	PC99 Certified	Yes
	S. Korean MIC Approval	Yes
	Taiwan BSMI Approval	Yes
	TCO 99 (emissions, ergonomics, environment)	Yes
	TUV-Ergo	Yes

	UL Listed	Yes
	VCCI Approvals	Yes
	Windows Certification	Microsoft Windows 98, Windows 2000, and Windows XP
Input Impedance	75 ohms ± 10%	
Input Signal	Four connectors, including one 15-pin mini D-sub VGA; one DVI-I (VGA analog and digital input), one composite video, and one s-video	
Sync Input	Separate sync (HSYNC/VSYNC); composite sync, Sync on Green	
Power Supply ALS	Auto-Ranging, 90 to 264 VAC; internal power supply, 60 Hz	
Power Rating	Maximum Mode	< 70 W
	Power Saving Mode	< 5 W
	Off Mode	< 5 W
Dimensions (HxWxD)	With stand - min height	16.3 x 19.2 x 8.2 in (41.4 x 48.8 x 20.8 cm)
	With stand - max height	21.4 x 19.2 x 8.2 in (54.4 x 48.8 x 20.8 cm)
	Without stand	16.1 x 19.2 x 3.0 in (40.8 x 48.8 x 7.6 cm)
Approximate Weight	With height-adjustable stand	26.4 lb (12 kg)
	Without stand	17.2 lb (7.8 kg)
Temperature	Operating	46° to 95° F (10° to 35° C)
	Non-operating	6° to 140° F (-10° to 60° C)
Humidity	Operating	20% to 80%
	Non-operating	5% to 85%
Warranty	Three-year limited warranty parts, including backlight and on-site labor or 48 hour direct unit replacement. Certain restrictions apply. Some terms vary depending on sales region. Consult HP Customer Service for details.	

Compatibility

The following graphics controllers and chipsets have been tested and proven compatible for use with the HP L2025 Flat Panel Monitor.

Graphic Controllers Compatible with "VESA Video Signal Standard (VSIS) Compliant" video cards.

NOTE: Features are subject to change without notice.

HP p930 CRT Monitor (Carbon/Silver)

Tube Type	Diamondtron Natural Flat (NF) aperture grille tube; anti-reflection, anti-static
Picture Tube Size (diagonal)	19 in (48.26 cm)
Viewable Image Area (diagonal)	18 in (45.72 cm)
Aperture Grille Pitch	0.24 mm
Horizontal Frequency (kHz)	30 to 110 kHz
Vertical Frequency (Hz)	50 to 160 Hz
Maximum Resolution	1920 x 1440 @ 60 Hz
Preferred Flicker Free Resolution	1280 x 1024 @ 85 Hz
Preset Graphic Modes (non-interlaced)	1600 x 1200 @ 85 Hz and 75 Hz 1280 x 1024 @ 85 Hz and 75 Hz 1024 x 768 @ 85 Hz 800 x 600 @ 85 Hz 640 x 480 @ 85 Hz and 60 Hz 720 x 400 @ 70 Hz
User-Modes	Yes, 8 modes
Anti-Glare/Anti-Static	Yes/Yes
Asset Control	Yes
Plug and Play	VESA DDC2B; PC2001 compliant
Front Panel User Controls	Power on/off; menu button; 4 OSD adjustment buttons; OSD exit button, information

	button	
On-Screen User Controls	Brightness, contrast	Yes
	Size and Positioning	Yes
	Pincushion (barrel)	Yes
	Trapezoid	Yes
	Moiré Correction	Yes
	Tilt (rotation)	Yes
	Selectable Color Temperature	Yes
	Factory Reset/Recall	Yes
	Orthogonality	Yes
	Current Display Mode	Yes
	Degauss	Yes
	Convergence	Yes
Approvals/ Certifications	UL/CSA/CUL Approval	Yes
	ISO9241-3, -7, -8 VDT Guidelines Approval	Yes
	MPR-II Compliant	Yes
	TCO '99	Yes
	FCC Approval	Yes
	Microsoft WHQL Certified	Yes
	Energy Star Compliant	Yes
	CE Compliant	Yes
Signal Cable	Attached 15-pin D-sub connector, 5.9 ft (1.8 m)	
Maximum Pixel Clock Speed	290 MHz	
Power Supply	Universal; 100–240 V (auto-ranging), 50–60 Hz	
Maximum Power Rating	= 120 watts	
Low Power Sleep Mode	< 3 watts	
Off Mode	0 watts	
Dimensions (HxWxD)	Unpacked	18.8 x 18.5 x 18.5 in (47.6 x 46.9 x 46.9 cm)
	Packaged	22.0 x 22.3 x 22.8 in (55.9 x 56.5 x 57.8 cm)
Weight	Unpacked	55 lb (24.9 kg)
	Packaged	61 lb (27.7 kg)
Tilt/Swivel Base	-5 to + 10 degrees vertical tilt; ± 45 degrees horizontal swivel	
Operating Temperature	50° to 95° F (10° to 35° C) non-condensing	
Operating Humidity	20% to 80% non-condensing	
Warranty	Limited three-year parts and repair labor, three-year service provider labor, and three-year on-site service warranty. Next Business Day advanced exchange direct replacement service available during warranty period. Certain restrictions and exclusions apply. For details, contact HP Customer Support at 970-635-1000 (USA) or 905-206-4663 (Canada).	

HP p1130 CRT Monitor (Carbon/Silver)

Tube Type	FD Trinitron aperture grille tube
Picture Tube Size (diagonal)	21 in (53.3 cm)
Viewable Image Area (diagonal)	19.8 in (50.3 cm)
Aperture Grille Pitch	0.24 mm
Horizontal Frequency (kHz)	30 to 130 kHz
Vertical Frequency (Hz)	50 to 170 Hz
Maximum Resolution	2048 x 1536 @ 75Hz

Maximum Pixel Clock Speed	< 370 MHz	
Preferred Flicker Free Resolution	1920 x 1440 @ 85 Hz	
Preset Graphic Modes (non-interlaced)	1920 x 1440 @85Hz 1800 x 1440 @80Hz 1600 x 1200 @75, 85Hz 1280 x 1024 @75, 85Hz 1024 x 768 @75, 85Hz 800 x 600 @75, 85Hz 640 x 480 @65, 75 and 85Hz 640 x 400 @ 70Hz	
User-Modes	8 preset modes and 10 additional modes	
Anti-Glare/Anti-Static	Yes/Yes	
Asset Control	Yes	
Front Panel User Controls	Power on/off switch; 5-button OSD; dual-input switch	
Languages	Nine	English, French, German, Spanish, Italian, Dutch, Swedish, Russian, Japanese
On-Screen User Controls	Size and Positioning	Yes
	Contrast	Yes
	Brightness	Yes
	Moiré Correction	Yes
	Tilt (rotation)	Yes
	Selectable Color temperature	Yes
	Orthogonality	Yes
	Degauss	Yes (automatic at power on; manual)
	Convergence (h/v/pre-set)	Yes
	Reset	Yes
Approvals/ Certifications	UL/CSA/CUL Approval	Yes
	ISO9241-3, -7, -8 VDT Guidelines Approval	Yes
	MPR-II Compliant	Yes
	TCO '99	Yes
	FCC Approval	Yes
	Microsoft WHQL Certified	Yes
	Energy Star Compliant	Yes
	CE Compliant	Yes
Plug and Play	VESA DDC2Bi and DDC2B. PC2001 compliant	
Dual Input	Yes, two 15-pin D-sub connections	
Signal Cable	Detachable 15-pin D-sub mini connector	
Power Supply	Universal; 100–240 V (auto-ranging), 50–60 Hz	
Maximum Power Rating	135 watts	
Low Power Sleep Mode	< 3 watts	
Off Mode	0 watts	
Dimensions (HxWxD)	Unpacked	19.7 x 19.6 x 19.3 in (50.2 x 49.7 x 49.0 cm)
	Packaged	26.0 x 26.0 x 26.0 in (66.0 x 66.0 x 66.0 cm)
Weight	Unpacked	67.2 lb (30.5 kg)
	Packaged	72.5 lb (32.9 kg)
Tilt/Swivel Base	-5 to + 15 degrees vertical tilt; ± 45 degrees horizontal swivel	
Operating Temperature	Non-condensing	50° to 104° F (10° to 40° C)
Operating Humidity	Non-condensing	10% to 80%

Altitude	Operating	0 to 13,000 ft (0 to 4,000 m)
	Non-Operating	0 to 50,000 ft (0 to 15,250 m)
Warranty	Limited three-year parts and repair labor, three-year service provider labor, and three-year on-site service warranty. Next Business Day advanced exchange direct replacement service available during warranty period. Certain restrictions and exclusions apply. For details, contact HP Customer Support at 970-635-1000 (USA) or 905-206-4663 (Canada).	

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